CONSTRUCTION NEWS

PERSONALS, ENGINEERING SOCIETIES, INDUSTRIAL NOTES, TRADE PUBLICATIONS.

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PERSONAL.

Mr. O. C. Breed has resigned as City Engineer of Fulton, N. Y.

Mr. E. W. Trafford has opened an office in the Chamber of Commerce Bldg., Richmond, Va., as a consulting electrical and mechanical engineer.

Mr. C. F. Brenn has been appointed Chief Engineer of the Northwestern Improvement Co. of Chestnut, Mont., succeeding Mr. S. K. Smith, resigned.

Mr. M. W. Yankins, of Iowa Falls, Ia., has been appointed Superintendent of the Paris, Tenn., city water and light plant, succeeding Mr. E. E. Davis, resigned.

Mr. H. B. Thompson has resigned as Constructing Engineer for the Tennessee Coal, Iron & R. R. Co., at Ensley, Ala., and Mr. J. F. McMullen is appointed his successor.

Mr. T. L. Nelson, General Manager of the Fort Wayne & Southeastern R. R., operating an electric line from Fort Wayne, Ind., to Wabash, has been appointed Receiver of that company.

Mr. T. C. Moorshead, formerly Assistant Engineer of the Terminal R. R. Association of St. Louis, Mo., has been appointed Engineer of Maintenance of Way for the Illinois Terminal R. R.

Mr. Horace G. Young, Secretary, Vice-President and General Manager of the Delaware & Hudson Co., has submitted his resignation to President Wilcox of that company, to take effect July 1.

Mr. Nesbit Wingfield, M. Am. Soc. C. E.; Mr. G. C. Whipple, Assoc. M. Am. Soc. C. E., and Prof. Wm. P. Mason, of Troy, N. Y., have been engaged to investigate the water supply of Danville, Va.

Mr. G. W. Coughlin, Principal Assistant Engineer of the Philadelphia & Erie R. R., has recently been appointed Superintendent of the Northern Central R. R., with headquarter at Elmira, N. Y.

Mr. George F. Evans, Vice-President and General Manager of the Maine Central Ry., has returned from a trip abroad. He arrived at Boston, Mass., on June 5, accompanied by Mrs. Evans and Miss Evans.

Mr. J. C. Oliphant, Assistant City Engineer of Toledo, O., has resigned. Mr. Oliphant will go at once to Marshall Mich., where he will have charge of the drainage and street improvements in that city.

Mr. H. E. Brown has resigned his position as one of the Resident Engineers of the Indianapolis Northern Traction Co., of Indiana, and has accepted a position with Mr. J. P. Force, Consulting Engineer, of Columbus, O.

Mr. Walter T. Curtis, Chief Draftsman of the Bridge Department of the C. & N. W. Ry., has resigned and accepted a position in the Structural Department of Joseph T. Ryerson & Son, 10 Milwaukee Ave., Chicago, Ill.

Mr. Howard M. Jones has returned to the Engineering Department of the Nashville, Chattanooga & St. Louis Ry. in Nashville, Tenn., where he was engaged prior to his accepting a position with the Louisville Bridge & Iron Co.

Mr. James L. Bernard, for the past nine years connected with the Atlas Portland Cement Co., and who represented that company in Mexico, Cuba and Porto Rico, has accepted a position in the Sales Department of the new Hudson Portland Cement Co., with offices located at Hudson, N. Y.

Capt. Edgar Jadwin, Corps of Engineers, U. S. A., now stationed at Los Angeles, Cal., is to be transferred to Galveston, Tex., and will be succeeded by Maj. Joseph H. Willard, U. S. Engineers, who has been in charge of river and harbor work at Chicago. Capt. Jadwin relieves Capt. Chas. S. Miche, who relieves Maj. Willard at Chicago.

Mr. J. W. McNair has resigned as Erecting Superintendent of the Pittsburg Division of the American Bridge Co., and is temporarily succeeded by Mr. W. J. Parsons, who will have his headquarters at 51st and Butler Sts., Pittsburg, Pa. Mr. James L. de Von has been appointed Assistant Manager of the Erecting Department of that division, with headquarters in Pittsburg.

Prof. William B. Ware, head of the School of Architecture of Columbia University, has retired after 22 years' active service. He will become Professor Emeritus. Prof. Ware has been consulting architect for many well-known buildings, and designed the American School of Classical Studies, at Athens, Greece, and also, associated with Henry Van Brunt, the Harvard Memorial Hall.

Mr. W. D. Taylor, M. Am. Soc. C. E., Professor of Railway Engineering in the University of Wisconsin, has been appointed Engineering Expert to the State Tax Commission of Wisconsin to assist the commission in the appraisement of the physical properties of the railways of the state in preparation for the change, in accordance with the new law, from the revenue to the ad valorem basis of taxation. His new duties do not require Professor Taylor to give up his chair in the university.

Governor Odell, of New York, has appointed a commission to investigate the threatened pollution of New York Bay by a trunk sewer planned to drain a portion of northern New Jersey and emptying into the Kill Von Kull, opposite the northeasterly end of Staten Islahd. It is composed of Messrs. Daniel Lewis, State Health Commissioner; Prof. O. H. Landreth, Consulting Engineer, State Board of Health; Dr. George H. Soper, Louis L. Tribus, Commissioner of Parks of the Borough of Richmond, New York City, and Myron S. Falk.

OBITUARY

Mr. Edward H. Ward, Sales Agent for the Sharon Steel Co., was killed in a wreck on the Santa Fe Ry. near Stillwell, Kan., on June 5. His home was in New Castle, Pa.

Mr. George Shaw, Mechanical Engineer, died at his home in McKeesport, Pa., on June 5, aged 41 years. He had for many years been in the employ of the Oil Well Supply Co.

Mr. Joseph Haight, Superintendent of the Pemberwick factories of the Russell Birdsall & Ward Bolt & Nut Corporation, died of heart disease at his home at Oakland Beach, Cal., on June 6, aged 76 years. Mr. Haight had been with the corporation for 45 years.

Mr. Edward Grafstrom, Mechanical Engineer of the Atchison, Topeka & Santa Fe Ry. at Topeka, Kan., was drowned during the recent floods in that city by the overturning of a skiff. Mr. Grafstrom was formerly for some years Chief Draftsman of the Motive Power Department of the Pittsburg, Cincinnati, Chicago & St. Louis Ry. at Columbus, O., before taking his position with the Santa Fe. He made several contributions to technical literature. Papers by him on the old Madison Hill incline and the locomotives used to operate it were published in our issues of Nov. 26, 1896, and June 10, 1897. He was a member of the American Society of Mechanical Engineers.

Mr. Henry G. Morse, M. Am. Soc. C. E., President of the New York Ship Building Co., Camden, N. J., was stricken with apoplexy in the office of J. P. Morgan & Co., New York, and died later at the Astor House on June 2. Mr. Morse was a native of Ohio and was about 55 years old. He was a graduate of the Rensselaer Polytechnic Institute of Troy, N. Y., class of 1871. After leaving college he entered the service of the Pennsylvania R. R., and until 1873 was engaged in various works on that line in an engineering capacity. From 1873 to 1878 he was Engineer for the Wrought Iron Bridge Co., of Canton, and for nine years after was a partner of the Morse Bridge Co., of Youngstown, O. He was President of the Edgemoor Bridge Works at Wilmington, Del., for nine years also, and from 1896 to 1898 was President of the Harlan & Hollingsworth Co., Wilmington, Del. He then gave his attention to the founding of the New York Shipbuilding Co., and in January, 1899, the capital for that vast enterprise had been secured and the site for the plant decided upon. He remained at the head of that industry until his untimely death.

ENGINEERING SOCIETIES.

COMING MEETINGS.

CANADIAN ELECTRICAL ASSOCIATION.
June 10, 11, 12 Annual convention at Toronto, Ont. Secy., C. H. Mortimer, Toronto.

INTERNATIONAL ASSOCIATION OF CAR ACCOUNTANTS AND CAR SERVICE OFFICERS.
June 17, 18. Annual meeting at Quebec, Canada. Secy., L. G. Corcoran, Buffalo, N. Y.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.
June 22 to 26. Annual meeting at Saratoga, N. Y. Secy., Prof. F. R. Hutton, 12 West 31st St., New York city.

AMERICAN WATER-WORKS ASSOCIATION.
June 23 to 26. Annual meeting at Detroit, Mich. Secy., J. M. Diven, Elmira, N. Y.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.
June 24, 25, 26. Annual convention at Saratoga Springs, N. Y. Secy., J. W. Taylor, Rookery Building, Chicago.

MASTER CAR BUILDERS' ASSOCIATION.
June 29, July 1. Annual convention at Saratoga Springs, N. Y. Secy., J. W. Taylor, Rookery Building, Chicago.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS.
June 29, July 2. Annual convention at Niagara Falls, N. Y. Secy., R. W. Pope, 95 Liberty St., New York.

SOCIETY FOR THE PROMOTION OF ENGINEERING EDUCATION.
July 1, 2, 3. Annual convention at Niagara Falls, N. Y. Secy., C. A. Waldo, Purdue University, Lafayette, Ind.

AMERICAN SOCIETY FOR TESTING MATERIALS.
July 1, 2, 3. Annual meeting at Delaware Water Gap, N. J. Secy., E. Marburg, University of Pennsylvania, Philadelphia.

AMERICAN PARK AND OUTDOOR ART ASSOCIATION.
July 7, 8, 9. Annual meeting at Buffalo, N. Y. Secy., C. M. Robinson, Rochester, N. Y.

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS.
July 17, 18. Annual convention at Niagara Falls, N. Y. Secy., W. M. Mackay, P. O. Box 1,818, New York city.

AMERICAN STREET RAILWAY ASSOCIATION.
Sept. 2 to 4. Annual convention at Saratoga Springs, N. Y. Secy., T. C. Penington, 2020 State St., Chicago, Illinois.

IRON AND STEEL INSTITUTE.—The autumn meeting of this society will be held at Barrow-in-Furness, England, on Sept. 1 to 4, 1903. There are many important works in the vicinity of Barrow, visits to a number of which will be included in the program. Secretary, B. H. Brough, 28 Victoria St., London, S. W.

COLORADO POLYTECHNIC ASSOCIATION.—Permanent organization was effected at a meeting held at Pueblo on May 26, with some fifty present as charter members. The following were elected as officers: President, Mr. A. L. Connor; Vice-President, Mr. E. W. Hathaway; Secretary, Mr. W. R. Pendery; Treasurer, Mr. W. Snodgrass.

CANADIAN ELECTRICAL ASSOCIATION.—The papers to be presented at the 13th annual convention, held at Toronto, Ont., on June 10, 11 and 12, are as follows: "Transformers for High-Voltage Transmission Lines," by Mr. J. W. Farley; "Individual Electric Drive and Its Relation to New Shop Methods," by Mr. R. T. Lozier, of Cincinnati, O.; "Some Points Relating to Submarine Power Cables," by Mr. G. U. G. Holman, of Quebec; "The Training of the High-Tension Engineer," by Mr. P. M. Lincoln, of Pittsburg, Pa.; "Single-Phase Alternating Motors as a Means of Increasing Station Earnings," by Mr. W. A. Layman, of St. Louis, Mo. A question box will be a feature of the convention, for which forty-one questions have been received.

WESTERN SOCIETY OF ENGINEERS.—At the regular meeting held at the society's rooms in Chicago on June 3, Mr. Willard Beahan, Division Engineer of the Chicago & Northwestern Ry., read a paper on "Railway Reconnoissance." He divided his subject into two parts: 1, reconnoissance for route; and 2, reconnoissance for line. The instruments and equipment required, and the methods of procedure to be followed, were described. The governing principles were also outlined, it being shown that railways are built not to display the skill of the engineer, but to get business, for which reason the traffic considerations should be taken into account in location. A paper by Mr. W. C. Bunnel on "Topographical Surveying" was read by title.

At the next meeting, on June 24, Mr. Wilbur Wright will present a paper on "Observations and Experiments in Soaring Flight." There will be no meetings during July and August.

CONSTRUCTION NEWS.

CONDENSED LIST OF CONTRACTS PENDING WITH DATE OF OPENING BIDS.

Bids to be opened	Work.	Place.	See Eng. News.
Jun. 11.	Paving, Newark, N. J.		May 28
	Advertised, Eng. News, May 28 and June 4.		
Jun. 11.	Water extension, Fort Monroe, Va.		Jun. 4
Jun. 11.	Building, Indianapolis, Ind.		Jun. 4
Jun. 11.	Bridge, South Bend, Ind.		May 21
Jun. 11.	Barges (4), New Orleans, La.		May 21
Jun. 11.	Building, Paducah, Ky.		May 14
Jun. 11.	Road, Harwich, Mass.		Jun. 11
Jun. 12.	Street lighting, Detroit, Mich.		Jun. 11
Jun. 12.	Bridge, Palmer, Mass.		Jun. 11
Jun. 12.	Grading and draining, Wauseon, O.		May 21
Jun. 12.	Sewer system, Lawrence, Kan.		May 21
Jun. 12.	Paving, Bridgeport, Conn.		May 28
	Advertised, Eng. News, May 28 to June 11.		
Jun. 12.	Bridges, Belleville, Ont.		May 28
Jun. 12.	Ammunition hoists (7), Boston, Mass.		May 28
	Advertised, Eng. News, May 28 to June 18.		
Jun. 13.	Water-works bonds, Clayton, Ala.		May 21
	Advertised, Eng. News, May 21 to Jun. 18.		
Jun. 13.	Paving, Celina, O.		May 28
Jun. 13.	Bridge, Cincinnati, O.		May 28
Jun. 13.	Water-works, sewers, etc., Alaska		Jun. 4
Jun. 13.	Manhole rings, Cleveland, O.		Jun. 4
	Advertised, Engineering News, Jun. 4.		
Jun. 13.	Sidewalks, La Grange, Ill.		Jun. 4
Jun. 13.	Paving, Brooklyn, N. Y.		Jun. 4
Jun. 13.	Building, Sauk Center, Minn.		Jun. 4
Jun. 13.	20-in. water pipe, Washington, D.C.		Jun. 11
	Advertised, Engineering News, June 11.		
Jun. 15.	Paving, Fitchburg, Mass.		Jun. 11

Jun. 15. Building, Morrison, Ill. .....Jun. 11
Jun. 15. Building, Chattanooga, Tenn. .....Jun. 11
Jun. 15. Building, New Bern, N. C. .....Jun. 11
Jun. 15. Paving, Houston, Tex. .....Jun. 11
Jun. 15. Bridge, Redwood City, Cal. .....Jun. 11
Jun. 15. Sea walls, Alameda, Cal. .....Jun. 11
Jun. 15. Retaining wall, Depew, N. Y. .....Jun. 11
Jun. 15. Life boats, Washington, D. C. .....Jun. 11
Jun. 15. Piling, Deweyville, Tex. .....Jun. 11
Jun. 15. Electric light system, etc., Detroit, Mich. Jun. 11
Jun. 15. Building, Clarksdale, Miss. .....Jun. 11
Jun. 15. Water main, North Tonawanda, N. Y. .....Jun. 4
Jun. 15. Electric light system, Vancouver, B. C. ....Jun. 4
Jun. 15. Bridge, New Philadelphia, O. .....Jun. 4
Jun. 15. Electric light plant, Ft. Bayard, N Mex. ..Jun. 4
Jun. 15. Water pipe, South Deerfield, Mass. .....Jun. 4
Advertised, Eng. News, Jun. 4 and 11.
Jun. 15. Water-works, Coopersburg, Pa. .....Jun. 4
Advertised, Eng. News, Jun. 4 and 11.
Jun. 15. Road, Freehold, N. J. .....Jun. 4
Advertised, Eng. News, Jun. 4 and 11.
Jun. 15. Paving, Burlington, Ia. .....Jun. 4
Advertised, Engineering News, Jun. 4.
Jun. 15. Sewers, Burlington, Ia. .....Jun. 4
Advertised, Engineering News, Jun. 4.
Jun. 15. Breakwater, Maulin, P. I. .....Mar. 12
Advertised, Eng. News, Mar. 12 to May 14
Jun. 15. Bridge, Holston, Va. .....May 28
Jun. 15. Garbage crematory, Shreveport, La. .....May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 15. Dredging, Norfolk, Va. .....May 28
Advertised, Eng. News, May 28 and June 4.
Jun. 15. Hydrants, etc., Great Falls, Mont. .....May 28
Advertised, Eng. News, May 28.
Jun. 15. Road, Neptune, N. J. .....May 28
Advertised, Engineering News, May 28.
Jun. 15. Building, Burlington, Vt. .....May 28
Advertised, Eng. News, May 28 to June 11.
Jun. 15. Building, Houston, Tex. .....May 28
Jun. 15. Post exchange, Salt Lake City, Utah. .....May 28
Advertised, Engineering News, May 28.
Jun. 16. Building, Two Harbors, Minn. .....May 28
Advertised, Eng. News, May 28.
Jun. 16. Bridge work, Hillsboro, N. Dak. .....May 28
Jun. 16. Paving, Rensselaer, N. Y. .....May 28
Advertised, Engineering News, Jun. 4.
Jun. 16. Building, Alexandria, Va. .....May 21
Jun. 16. Building, Los Angeles, Cal. .....May 21
Jun. 16. Electric light plant, Buhl, Minn. .....Jun. 4
Jun. 16. Building, Freehold, N. J. .....Jun. 4
Jun. 16. Plumbing, heating, etc., Ft. Caswell, N. C. .Jun. 11
Jun. 16. Paving, Bloomington, Ind. .....Jun. 11
Jun. 16. El. l't plant and W.-W., Clayton, Ala. .....Jun. 11
Jun. 16. Bridge, Kragnes, Minn. .....Jun. 11
Jun. 16. Machine tools, Washington, D. C. .....Jun. 11
Jun. 17. Building, New York, N. Y. .....Jun. 11
Jun. 17. Building, Augusta, Me. .....Jun. 11
Jun. 17. Paving, Louisville, Ky. .....Jun. 11
Jun. 17. Building, Grand Forks, S. Dak. .....Jun. 4
Jun. 17. Sewer supplies, New York, N. Y. .....Jun. 4
Jun. 17. Pier construction, Grand Rapids, Mich. ....May 21
Advertised, Eng. News, May 21 to Jun. 18.
Jun. 17. Roads, Providence, R. I. .....Jun. 4
Jun. 18. Building, Boone, Ia. .....May 21
Advertised, Eng. News, May 21 and 28.
Jun. 18. Street lighting, Portland, Ore. .....Apr. 23
Jun. 18. Building, Salt Lake City, Utah. .....May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 18. Bridges, Shreveport, La. .....May 28
Advertised, Eng. News, May 28 to June 18.
Jun. 18. Building repairs, Dayton, O. .....Jun. 4
Jun. 18. Cast-iron mains, New York, N. Y. .....Jun. 4
Jun. 18. Sewers, Woodstock, Ont. .....Jun. 4
Advertised, Engineering News, Jun. 4.
Jun. 18. Sewer, Ingram, Pa. .....Jun. 11
Jun. 18. Paving, Charlevoix, Mich. .....Jun. 11
Advertised, Engineering News, June 11.
Jun. 18. Building, Hot Springs, Ark. .....Jun. 11
Jun. 18. Paving, Buffalo, N. Y. .....Jun. 11
Jun. 18. Broken stone, (Misc. C.), New York, N. Y. .Jun. 11
Jun. 18. Cement, Boston, Mass. .....Jun. 11
Jun. 19. Road, Liberty, O. .....Jun. 11
Jun. 19. Building, Fort Clark, Tex. .....Jun. 11
Jun. 19. Sewage purification, Leavenworth, Kan. ....Jun. 4
Jun. 20. Water-works, Oakland City, Ind. .....Jun. 4
Jun. 20. Bridge, Marion, Ind. .....May 28
Jun. 20. Sewers, Washington, D. C. .....May 14
Advertised, Eng. News, May 14 to Jun. 11.
Jun. 20. Grading, Washington, D. C. .....Jun. 11
Advertised, Eng. News, Jun. 11 and 18.
Jun. 20. Building, Baton Rouge, La. .....Jun. 11
Jun. 20. Water pipe, Washington, D. C. .....Jun. 11
Advertised, Engineering News, June 11.
Jun. 20. Vessel, New York, N. Y. .....Jun. 11
Jun. 20. Sewers, Paris, Ill. .....Jun. 11
Advertised, Engineering News, June 11.
Jun. 21. Building, Salem, Ore. .....May 21
Jun. 22. Breakwater extens'n, New London, Conn. .May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 22. Dredging, Baltimore, Md. .....May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 22. Bridge, Newport, Ky. .....Jun. 4
Advertised, Engineering News, Jun. 4.
Jun. 22. Building, Brockton, Mass. .....Jun. 11
Jun. 22. Building, Stillwater, Minn. .....Jun. 11
Jun. 22. Building, New York, N. Y. .....Jun. 11
Jun. 22. Bridge, Ashley, Pa. .....Jun. 11
Jun. 22. Bridge, Mankato, Minn. .....Jun. 11
Jun. 22. Repairs, wiring, etc., New York, N. Y. ....Jun. 11
Jun. 23. Paving, La Crosse, Wis. .....Jun. 11
Jun. 23. Building, Yankton, S. Dak. .....Jun. 11
Jun. 24. Gallery (building), Washington, D. C. .....Jun. 4
Advertised, Eng. News, Jun. 4 and 11.
Jun. 24. Sewer, Jersey Shore, Pa. .....Jun. 4
Advertised, Eng. News, Jun. 4 to 18.
Jun. 24. Extend'g breakwater, Grand Rapids, Mich. .May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 24. Light-house supplies, Tompkinsville, N Y. .May 28
Advertised, Eng. News, May 28 to June 25.
Jun. 24. Sewer, Norristown, Pa. .....Jun. 11
Jun. 24. Building, Dayton, O. .....Jun. 11
Jun. 24. Paving, Cincinnati, O. .....Jun. 11
No date. Water supply, Horseheads, N. Y. .....Jun. 11
Advertised, Engineering News, June 11.

RAILWAYS

ALPENA, GAYLORD & WESTERN.—Wm. M. Durand, Pres., 602 Majestic Bldg., Detroit, Mich., writes that the company is ready to let contracts for building its 180 miles of steam road, and that all communications should be addressed to the president. Surveys and maps have been made, and rights of way secured to Gaylord and the balance pledged. Large bonuses are assured. Correspondence on financing is solicited. The road will touch Alpena, Gaylord, Mancelona, Traverse City and Frankfort. C. M. Stephens is Ch. Engr., address as above.

BALTIMORE & OHIO.—For information concerning the talked-of connecting line between the Belington, W. Va., branch and Buckhannon on the line from Weston to Pickens, W. Va., or other work proposed by this company, J. M. Graham, Ch. Engr., Baltimore, Md., should be addressed. W. L. Deer is Ch. Engr. of the Erie R. R., and not of this road as was recently stated.

CALIFORNIA NORTHWESTERN.—A line from Willits to Eureka, Cal., will be started at once, it is said. F. K. Zook is Supt. and Ch. Engr., Tiburon, Cal.

CANADA.—W. C. Perkins, Ottawa, Ont.; M. McKenzie, Masleod, and A. W. Fraser, Ottawa, are applying to the Dominion Parliament for the incorporation of the Brandon, Saskatchewan & Hudson Bay Ry. A line from the interprovincial boundary of Manitoba to Brandon, Saskatchewan, Fort Church and York Factory, with a branch to Souris and another to Nepawa, is contemplated.——A bill incorporating the Coast & Yukon Ry. has passed the House of Commons. Some 900 miles of road giving an all-Canada route to the Yukon River, are proposed. Vancouver, B. C., will be the headquarters; similar bill also passed for the Kootenay, Cariboo & Pacific Ry., for a line from Golden to Fort George on the Fraser River; also for the McLeod, Cardston & Montana Ry., which will construct a standard gage line from McLeod via Cardston to the International boundary.——The Bruce Mines & Algoma Central Ry. is authorized to build an extension to a point on the C. P. R., between Chapleau and Biscotasine. John McKay, Sault Ste. Marie, Ont., is interested.

CINCINNATI, HAMILTON & DAYTON.—A contract is reported let for building the connecting line from Delphos to Mandale, Ind. About 24 miles of rail will be laid. C. A. Wilson is Ch. Engr., Cincinnati, O.

CURWENSVILLE & BOWER.—McArthur Bros., Chicago, Ill., are reported to have secured a contract for constructing this road, about 14 miles in length.

DENVER, NORTHWESTERN & PACIFIC.—We are informed that proposals are being sent to various contractors and bids will be received until June 30 for constructing the Main Range tunnel. The tunnel is to be about 2½ miles long, through the Continental Divide, 60 miles west of Denver, and work includes completion of approach, cuts and embankments. Form for proposal is on file at Engineering News Office, 220 Broadway, New York. H. A. Sumner is Ch. Engr., and A. C. Ridgway, Gen. Mgr., Denver, Colo.

EASTERN RY. & LUMBER CO.—This company has acquired the rights and franchises of the Tacoma, Olympia & Chehalis Valley Ry. and will at once construct a line east from Centralia, Wash., to the timber lands of that section, which will be about 22 miles long.

GRAND TRUNK.—The line between Jordan, Ont., and Niagara Falls, 17 miles, has just been completed and opened for traffic. W. P. Chapman, Asst. Engr. at Hamilton, Ont., informs us that the bridge work on this section was costly, there being three steel viaducts aggregating 2,200 ft., two draw bridges across the Welland canals and other small bridges. This completes a double track from Toronto to Niagara Falls, 82 miles.

KIMBERLY RUN COAL CO.—C. P. Collins, Gen. Mgr. and Ch. Engr., Somerset, Pa., writes that this company is now prospecting a coal field in the vicinity of Somerset, which will necessitate the construction of about four miles of railroad, and if the present investigations prove favorable the line will be built in the near future.

MT. AIRY & EASTERN.—S. A. White, Mt. Airy, N. C., informs us that there are no plans for the extension of this road in the immediate future.

NEW YORK CENTRAL & HUDSON RIVER.—Provisional plans for the proposed improvement of the terminal station in New York city have been submitted to Mayor Low. The plans call for the sinking of the station yard several feet, the laying of new tracks under Park Ave. on both sides of the present track and the enlargement of the station by a driveway, in the form of a half ellipse, from an entrance to be constructed on a viaduct at 45th St., running along Vanderbilt Place to 42d St. and returning via Depew Place. An approach will also be made to the new station on the south side of the viaduct above Park Ave., from 41st St. to the terminal. An entrance is planned for the block of land between 43d and 44th Sts. The station, it is understood, will be 20 stories high, and besides containing the various offices of the company, will be utilized as a hotel. W. H. Newman is Pres.; H. Fernstrom is Ch. Engr., New York.

NORTHWEST COAL & COKE CO.—This company is about to build 17 miles of railway connecting its new coal fields in Washington with the Crows Nest Division of the C. P. R. Donald McLeod, Nelson, B. C., is the contractor.

OREGON R. R. & NAVIGATION CO.—Contracts have been let for constructing concrete masonry abutments and piers for 17 of the bridges on the western portion of the road; also for filling in 30 trestles with earth. Deeks & Decks, St. Paul, Minn., will do the work on the bridges between Walla Walla and Spokane, and Smyth & Howard, Portland, Ore., the work on the bridges between Umatilla and Huntington. The Pacific Coast Construction Co., Portland, Ore., received the contract for filling in the trestles which are to be eliminated. The steel for the bridges has been ordered from the American Bridge Co.

PERE MARQUETTE.—The preliminary surveys for the extension of the Pentwater branch, from Hart to Ludington, have been finished and the location is now under way, S. E. Swigert, Engr., having that work in charge. The new line will be practically without grades. F. H. Alfred is Ch. Engr., Detroit, Mich.

PENNSYLVANIA R. R.—This company has purchased considerable property in Long Island City, N. Y., and will use it in establishing extensive terminals. These will be used in connection with the proposed East River tunnel, a continuation of the line under the Hudson River from New Jersey into New York city.

SAN PEDRO, LOS ANGELES & SALT LAKE.—The company's headquarters will be moved from Los Angeles, Cal., to Salt Lake City, Utah. J. Ross Clark, Vice-Pres., has recently closed a contract for the purchase of 12,000 tons of steel, and 15,000 tons more will be ordered. Contracts will also be placed in a few days, it is said, for completing the road. This will include the laying of 300 miles of rails.

SOUTHERN RAILWAY.—Contract let to T. B. Jones & Co., Baltimore, Md., for building the Danville, Ky., extension, from Harrodsburg. Work will be started within a few weeks.

TEXAS.—John Mead, C. E., Anderson, Tex., is planning a 22-mile railway to tap a rich agricultural district in Central Texas, now without railway connections. He has assurance that sufficient local capital can be secured to grade the line provided arrangements can be made for outside capital to equip the road. The cost of the line would be low and the traffic good. Mr. Mead wants to communicate with a firm or parties to furnish the rails (relays would do) and rolling stock and to handle the company's bonds.

WASHINGTON.—Press reports from Spokane state that the Payette Improvement & Boom Co., at Long Valley, Idaho, will build a railway from Long Island into the timber country.

WESTERN MARYLAND.—Bids will be called for this month, it is said, for building the Cumberland-Cherry Run extension between this road and the West Virginia Central, about 65 miles. The new line will have a max. grade of 15 ft. to the mile. The Potomac River will be bridged three times and several tunnels will be needed. Bids for new equipment and motive power will be received, including 300 steel hoppers, 200 gondolas, 200 box cars and two new passenger engines. J. Q. Barlow is Ch. Engr., Cumberland, Md.

STREET AND ELECTRIC RAILWAYS.

HAVERHILL, MASS.—Civil Engineer Spoffard has started work on the survey of the new electric line from Haverhill to Salem, to be about 16 miles long.

HUNTINGTON, MASS.—J. H. Dickinson informs us that the Huntington & Westfield River Ry. Co. has not received its charter yet, but the matters of financing and rights of way are being considered by the officials of the company. W. H. Whittiesey, Pittsfield, is Pres., and Durkee, Towne & White, Springfield, are Ch. Engineers.——Durkee, Towne & White are also engineers for the Hoosac Valley St. Ry. Co., which company has just received bids for about six miles of road. Dolan Bros. are Mgrs.

PAWTUCKET, R. I.—The improvements contemplated by the Pawtucket St. Ry. will mean an expenditure of $750,000. The Rhode Island Co., Providence, Fred. Bushnell, Ch. Engr., owns and controls this property.

MIDDLETOWN, CONN.—The Middletown St. Ry. Co. has acquired franchises to build various additions to its lines within the city and its suburbs.

HARTFORD, CONN.—A charter has been granted the Willimantic & Southbridge St. Ry. Co., which will build a trolley road between Willimantic, Conn., and Southbridge, Mass. Edwin O. Summer is interested.——The Voluntown & Jewett City St. Ry. Co. has been incorporated with $500,000 capital stock, and is granted franchises in Voluntown and Griswold and in the borough of Jewett City. John N. Lewis, Geo. T. Briggs and Ezra Briggs are interested. Company's office, Voluntown.

NEW YORK, N. Y.—The Ocean Electric Ry. Co., of Rockaway, has applied to the board of estimate for a franchise to build an electric railway between Rockaway and Far Rockaway.——Improvements are to be made to the stations of the Manhattan Elevated R. R. in this city. Those at Rector, Cortlandt and Barclay Sts. on the Ninth Ave. line will be remodeled first and new elevators will be put in the one at 116th St. and Eighth Ave. At 33d St. and Sixth Ave. two escalators and a bridge over the tracks will be put in. G. H. Pegram is Ch. Engr., 195 Broadway.

PENN YAN, N. Y.—Morris F. Sheppard, Pres. Lake Keuka & East Side Electric R. R., Penn Yan, writes us that the surveys are all made and about two-thirds of the right of way secured. Bids will be called for within about 30 days. The placing of the bonds is now under discussion. Line will be 34 miles in length. Chief Engineer not yet appointed.

LAMBERTVILLE, N. J.—Council granted the Delaware Valley Traction Co. a franchise in this city.

PHILADELPHIA, PA.—The Philadelphia Rapid Transit Co. will build a line to Darby. It will be an extension of the Chester Ave. system. W. S. Twining is Ch. Engr.

WILMINGTON, DEL.—H. R. Fothergill, Ch. Engr. Delaware Suburban Ry. Co., writes that the company will be ready to let contracts in about 30 days. Surveys are now being made. Line will be 18 miles long. Franchise for terminal at Fifth and Market Sts. has been secured. Company has opened an office in the Gawthrop Bldg.

BUFORD, GA.—Charter secured for the Piedmont Electric Ry. Co., to build 40 miles of road from Atlanta to Cummings: cap., $500,000.

JENNINGS, LA.—Business men of Jennings have capital for and will build electric line to the oil field, six miles distant; est. cost, $150,000.

NEW ORLEANS, LA.—Extension of the Rampart and Dauphine line of the New Orleans Ry. to Port Chalmette is being considered. John G. Woods is Gen. Mgr.

LOUISVILLE, KY.—The Kentucky Traction Co. is granted right of way for a new line within the city.——The Bluegrass Consolidated Traction Co. has staked out a road from Lexington to Versailles. Engineer Bean had charge of the work.

CINCINNATI, O.—E. F. Layman, Ch. Engr., 32 East Third St., Cincinnati, informs us that the surveys for the line of the Madison, Greensburg & Indianapolis Ry. are finished, but the capital is not yet secured and contracts are not ready for letting. The line will be an electric, 49 miles in length.

TOLEDO, O.—S. C. Heston, Secy., Toledo & Michigan Electric Ry. Co., 323 Spitzer, Toledo, informs us that a private right of way has been secured; also franchises in principal cities. Surveys and estimates are made, but the capital is not provided for. The line will be 61 miles long and run from Adrian to Hudson, Hillsdale, Jonesville, Quincy and Coldwater. Field, Hinchman & Smith, Detroit, Mich., are Engrs.——Work on the proposed Toledo & Ann Arbor Electric Ry. will begin shortly it is stated, the construction funds having been pledged. It will be 55 miles long. All franchises and a large part of the right of way are reported secured. John H. Clauss is Pres.; L. H. Austin is Mgr.; cap., $1,650,000.

YOUNGSTOWN, O.—The contract for building the electric road from this city to East Liverpool by the Youngstown & Southern Ry. has not been awarded, the bids received not having been satisfactory. John H. Ruhlman is Secy. and Treas.

YOUNGSTOWN, O.—Bids are reported wanted by the Mahoning Valley Ry. Co. for constructing an electric line from this city to Struthers. John Wolf is Ch. Engr.

DECATUR, IND.—The Springfield & Fort Wayne Traction Co. granted a franchise through this city. Work must be started within 90 days and be completed by July 1, 1904.

FRANKFORT, IND.—W. P. Tidwell, Treas. Frankfort & Logansport Traction Co., writes that the line has been surveyed and some right of way obtained. Franchises all taken; capital not entirely secured. Road will be 40 miles long and be operated electrically. Wm. H. Coulter, Frankfort, is Pres., and W. O. Ball, Chicago, Ch. Engr.

ern Indiana Traction Co., has announced that the last franchise for the company's section of the Cincinnati-Chicago air line has been secured, it having been granted by the city of Winchester.

SULLIVAN, ILL.—S. W. Wright, Sullivan, writes that a survey is made and much right of way obtained for the electric line of the Springfield, Moweaqua, Sullivan & Mattoon Ry., which will be 75 miles long. Capital not yet arranged for, but the outlook is favorable. The company will be ready to build soon. Nearly 2,100 pop. to the mile along the route. J. B. Titus, Sullivan, is Pres.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

CHICAGO, ILL.—The De Kalb & Southwestern Electric Ry. has incorporated with $5,000 cap., to build line from De Kalb to Steward, with a branch to this city, to Rock Island and to Cairo, Ill. E. L. Titus, Steward; S. D. Frost, Amboy, and Geo. H. T. Shaw, Dixon, are incorporators.——Fulton County Electric Ry., Canton, incorporated; cap., $10,000; James A. W. Lawrence, Henry H. Fuller and Herbert J. Shannon are interested.

APPLETON, WIS.—Contract for grading and bridging the electric line from Kaukauna to Green Bay let to Pound & Co., Chicago. The rails, rolling stock, electrical materials, etc., are all ordered, and the road will be operating this year. The power house will be at Green Bay, where electricity will be generated by steam power. The Knox Construction Co. will build the line.

LA CROSSE, WIS.—Mills Tourtelotte, Pres. La Crosse & Black River R. R., informs us that surveys and estimates are about completed for the company's road and contracts will be let within 60 days. Capital not fully arranged for. The road will be operated electrically and be 51 miles long. C. A. Chapman is Ch. Engr., 1041 Marquette Bldg., Chicago.

AUDUBON, IA.—John A. Nash, of this city, writes us that the Western Iowa Interurban Co. will build a road from Des Moines via Guthrie Center, Audubon, Harlan to Logan, and possibly to Council Bluffs. If built to Council Bluffs it will be 120 miles long, but it is not likely that it will be carried further than Logan for the time. The company has incorporated and completed its organization. Surveyors will take the field without delay.

GLENWOOD, IA.—Local papers state that a construction company is being organized at Tabor to make a preliminary survey and secure estimates of the cost of the proposed electric line from Rockport to Council Bluffs, some 70 miles. The survey will be started in a few days. C. L. Ellis is Pres., and A. T. West, Secy.

SALEM, ARK.—W. K. Palmer, Ch. Engr. Salem & Eastern Ry., N. Y. Life Bldg., Kansas City, Mo., informs us that a survey has been made for a distance of 31 miles, and a horseback survey for the entire projected length of 300 miles. Negotiations are in progress for the capital. Kansas City, Mo., Poplar Bluff, Salem, Ark., Mountain Home, Harrison and Fayetteville are on the line. Electricity will be the motive power. R. A. Youngblood is Pres., Salem.

BEAUMONT, TEX.—The Beaumont & Sour Lake Construction Co. has organized with $50,000 capital, to build the proposed Beaumont-Sour Lake electric line. G. W. Mecker, Houston; Ed. Kennedy, Beaumont; and John B. Linn, Springfield, O., are incorporators.

HOUSTON, TEX.—A company will soon be incorporated to build an electric road from this city to Sylvan Beach. J. O. Ross, W. B. Slosson and C. H. Milby are interested. Franchises will soon be asked in this city; already secured in La Porte, it is said.

STAPLES, TEX.—A movement on foot to construct electric railway between this place and San Marcos, a distance of eight miles. B. J. Butler of Staples can probably give information.

PUEBLO, COLO.—Plan being considered for constructing a railway from Pueblo to Beulah. George Peck of Cincinnati, O., has made known to the Business Men's Association that he is interested in such a line. A franchise was secured in Pueblo about a year ago. The cost of the road is estimated at $1,000,000. About 40 miles of line will be built including sidings to quarries, and electricity will be used for power. Some surveys have been made, but another will be necessary.

ROSWELL, N. MEX.—W. M. Reed, Ch. Engr. Roswell Transit Co., writes that preliminary surveys have been made and construction will begin this fall. Line will be six miles long. City franchise granted. L. K. McGaffey is Pres.

WASHTUCNA, WASH.—Work is now under way on the dam for the Adams County Electric Transit Co. on Rock Lake, to cost $100,000. Preliminary surveys for the electric road from here to Davenport via Ritzville are completed and work will soon start on the construction.

NEVADA CITY, CAL.—L. C. Jones, Engr. Central Electric Co., states that the company intends to immediately complete the line now finished to a point between here and Grass Valley.

SAN JOSE, CAL.—Geo. Chadwick, Engr. San Jose & Los Gatos Interurban Ry., has stated that work will begin on the construction as soon as the franchise is obtained.——Bids will be received until July 7 for an electric railway franchise for which application has been made by H. F. Parkinson.

LIGHT, HEAT AND POWER PLANTS.

READSBORO, VT.—Plans are under way for development of water power from Howe's pond and the Deerfield River.

ATTLEBORO, MASS.—E. K. Watson, Warren, Mass., has the contract for the local substation of the Interstate Consolidated Street Railway Co. The building will cost about $6,000 and the equipment $35,000.

WESTFIELD, MASS.—Stated that J. C. Buschmann will install electric light plant.

BUFFALO, N. Y.—Council committee has reported in favor of establishing a municipal electric plant.

NIAGARA FALLS, N. Y.—Ontario Power Co., will, it is said, construct another wing dam, 300 ft. up the river from its present dam.

POTSDAM, N. Y.—We are informed that bids will probably not be called until fall for $30,000 village electric plant. The matter will probably be voted on in August. Sweet Engineering Co., Utica, N. Y., is Des. Engrs.; George Lewis, Village Pres.

SAUGERTIES, N. Y.—Franchise for electric lighting granted Ulster Heat, Light & Power Co., who will take over electric plant now in operation.

SEA ISLE CITY, N. J.—Franchise for gas works here granted Joseph Straubmiller and others, of Philadelphia.

GIRARD, PA.—We are informed that specifications for bids for gas plant of Mahoning Valley Gas Co. will not be ready for two or three months. F. H. Shelton, Fidelity Bldg., Philadelphia, is Des. Engr.

WILMINGTON, DEL.—Franchise to lay gas mains has been granted to Oxy-Hydrogen Gas Co., J. F. Allee, Pres.

AUGUSTA, GA.—Leonard Phinizy is said to be at the head of a movement for a new electric plant to be run on the co-operative plan.

MILLEDGEVILLE, GA.—The Milledgeville Electric Co. proposes to build a 35-ft. high draw at Furman Shoals, on the Oconee River, for developing water power; 10,000 HP. will be transmited to Macon.

CLAYTON, ALA.—Contract for constructing electric light plant and water-works will be let June 16: $20,000 bonds were recently voted for this work. J. S. Williams is Mayor.

WINDER, GA.—We are informed that bids will probably be let July 10 for proposed city electric plant. The plant is to be operated by steam and is to have a capacity of 30 arc and 500 incandescent lights. The estimated cost is $10,000. A. A. Camp, Mayor.

COLUMBUS, MISS.—City will put in incandescent light plant of about 25 lights; engine will also be needed. C. L. Lincoln is Mayor.

OCEAN SPRINGS, MISS.—Biloxi Electric Light Co. may light this city. F. M. Weed is Mayor.

NEW ROADS, LA.—We are informed that bids will be called as soon as specifications are prepared for the proposed $40,000 plant of the New Roads Electric Light & Power Co. The ice plant and water-works will be combined. W. H. Fleming, 327 Hemen Bldg., New Orleans, La., is interested.

CUMBERLAND CITY, TENN.—Harry J. McDargh, City Hall Bldg., Dayton, O., is making surveys for the proposed 15,000-HP. electric plant at Cumberland Falls. It is proposed to erect a 75-ft. high masonry dam, ½ mile above the falls and to carry the water through a 12-ft. steel tube to the generating station. Estimated cost of work is about $1,500,000.

DETROIT, MICH.—Bids are asked until June 15 for electric light system and constructing water-works for Ford village. Geo. Clark, Village Clk.

SHEBOYGAN, MICH.—Contract let to Riebolt & Walters, Sturgeon Bay, Mich., for piling for foundation and docks of new power house of Sheboygan Light, Power & Railway Co.

WOODMERE, MICH.—Bids are asked until June 12 for lighting village streets. Chas. W. Kurth, Village Clk., Substation 1, Detroit, Mich.

BERLIN, WIS.—Geo. H. Warnking will construct coal gas works in this place.

GRANTSBURG, WIS.—Bids will be received by this village until June 23 for an electric light plant, to consist of 60-HP. engine, 35-KW. dynamo, boiler, pole line, wiring, etc. Oscar Clausen, Ger. Am. Bank Bldg., St. Paul, Minn., Cons. Engr.

DES MOINES, IA.—The Iowa Heat, Light & Power Co., John Shiveley, has planned for erecting six hot-water heating plants, involving the expenditure of from $25,000 to $50,000 each.

MOULTON, IA.—Town will have electric light plant.

SCHLESWIG, IA.—Gas lighting company formed here.

UNION, IA.—Electric light plant for town.

WILLIAMS, IA.—Town votes June 11 on electric franchise.

PELICAN RAPIDS, MINN.—We are informed that bids will probably be received after June 20 for proposed electric light plant for which $10,000 of bonds were voted.

WINONA, MINN.—City lighting contract is to be let to Winona Railway & Light Co. for a ten-year term at $68 per enclosed arc lamp per year.

RICH HILL, MO.—Contract for improvements to electric light plant, gas plant and water-works let to Guido Jaiger; improvements include new dynamo, steel tank, etc.

DENTON, TEX.—City electric plant talked of.

GEORGETOWN, TEX.—Georgetown Water & Electric Co. will spend $10,000 in improvements.

KYLE, TEX.—W. D. Wood, San Marcos, Tex., is interested in improvement and operation of local electric light plant and cottonseed oil mill.

DURANGO, COLO.—Grading and other preliminary work for the proposed power development on the Animas River has begun. It is expected that $3,000,000 will be expended on the project. P. H. Scott, Denver, Colo., is said to be interested.

TECUMCARI, N. M.—Electric light and water-works plant will be established. Merrill H. Fisher, Alamagordo, is interested.

PALOUSE, WASH.—D. G. Klinefilter, Shelton, Wash., has asked for franchise for installing electric plant.

BAKER CITY, ORE.—Reported that plant of Gas & Electric Co., recently completely destroyed by fire, with loss of $30,000, will be rebuilt.

SUMPTER, ORE.—Sanger Consolidated Mines Co., J. K. Romig, Gen. Mgr., will install electric plant on East Eagle Creek.

BLUE LAKE, CAL.—Northern Power Co., represented by C. Deane, Eureka, Cal., is considering proposition to develop power on Smith River in Del Norte County; cost of proposed plant is estimated at $500,000.

LOS ANGELES, CAL.—Los Angeles Railway Co., J. A. Muir, Gen. Mgr., will build another large electric substation on the Plaza.

SALINAS, CAL.—A. B. Fitch has asked franchise for electric light plant.

SAUSALITO, CAL.—Electric lighting franchise will probably be let to Thos. Frost, owner of Sausalito Electric Lighting Co.

STOCKTON, CAL.—City to have $160,000 electric plant.

EMMETT, IDAHO.—W. H. Davis contemplates putting in electric plant.

RICHFIELD, UTAH.—James E. Billingsby has applied for electric light franchise in this town. It is proposed to build an electric plant in Joseph and to supply electricity to Joseph, Elsinore, Monroe and Richfield.

WOODSTOCK, N. B.—Installation of new machinery in city electric plant is to be made at once at cost of $7,000. A. J. McIntosh, Chn. Light Comn.

SHERBROOKE, QUE.—County has offered Sherbrooke Heat, Light & Power Co. $150,000 for their electric plant and water power.

MOOSE JAW, N. W. T.—Town seeks right to establish electric light plant and water-works.

BONDS.—North Birmingham, Ala., will issue $60,000 of bonds, $15,000 of which are for electric light plant.——Litchfield, Mich., votes not to issue $5,000 bonds for electric light plant.——Grantsburg, Wis., votes to issue $8,000 of bonds for electric light plant.——Corona, Cal., voted June 8 on $60,000 bond issue for steam power electric plant. H. A. Wood is Cy. Clk.——Stockton, Cal., votes to issue $160,000 of bonds for building lighting plant.

BRIDGES

BANGOR, ME.—City votes not to purchase Bangor-Brewer toll bridge.

CLAREMONT, N. H.—Selectmen will contract for steel bridge over Connecticut River. Estimated cost is about $38,000.

BROCKTON, MASS.—Contract for stone for Ames St. bridge of N. Y., N. H. & H. R. R. was let to John Cashman.

LOWELL, MASS.—George Bowers, Cy. Engr., estimates the cost of a 50-ft. bridge over Beaver Brook at New York St., at $32,000. He also estimates the cost of a 50-ft. steel bridge over the river at Pawtucket St., at $75,000.

NORTH ADAMS, MASS.—Hoosac Valley St. Railway Co. will build concrete and steel arch bridge at Braytonville.

PALMER, MASS.—Bids are reported asked until 2 p. m., June 12, for constructing stone arch bridge at Thorndike and a steel arch bridge at Burleigh Crossing. A. J. Purington, Bridge Com.

SPRINGFIELD, MASS.—New bids for raising South End bridge have been received as follows: Charles Trask, Proposition No. 3, $13,500; No. 4, $14,500; No. 5, $15,500; Springfield Construction Co., No. 1, $15,500; No. 2, $17,000; No. 3, $14,500; No. 4, $15,500; Donahue & Chilas, No. 1, $15,000; No. 2, $15,400; Eastern Bridge Construction Co., No. 1, $21,257; No. 3, $17,000.

HARTFORD, CONN.—Bids are asked until July 1 for constructing a stone bridge across the Connecticut River, to be 1,185 ft. long, 80 ft. wide, having eight stone arches and a 100-ft. draw span. The contract will include the foundations, piers and abutments, containing in all about 23,000 cu. yds. of pneumatic foundation work and about 63,000 cu. yds. of all classes of masonry above the foundations. Morgan G. Bulkeley, Pres. Connecticut River Bridge and Highway District Comn.; E. D. Greaves, Ch. Engr. A. P. Boller, 1 Nassau St., New York, is Consulting Engr.

BUFFALO, N. Y.—In our last issue we stated that contract for substructure of viaduct over Lake Shore tracks had been let to F. J. Reap. This was a mistake, the contract having been let to McKeown & Johnson, 3120 Main St., at $106,893.

BUFFALO, N. Y.—Grade crossings commission is making plans for foot bridges for various street crossings.

NEW YORK, N. Y.—The board of estimate has appropriated $6,532,000 for building bridge No. 3, over the East River. It is said that Commissioner Lindenthal is ready to call for bids for the work and that it is his intention to let one contract for all the iron work on the bridge.——Plans have been ordered drawn for two bridges over the Harlem River, one a modern structure to replace the Madison Ave. bridge and the other to span the river at Fordham Heights.——Contract for steel under-flooring for Williamsbuig bridge was let to the R. H. Hood & Co., 220 Broadway, for $168,746. The contract for creo-resinate wood paving was let to the U. S. Wood Preserving Co. for $31,989.

ONEIDA, N. Y.—Board public works will receive bids until June 16 for repairing Oneida Creek bridge after plans of City Engineer Vedder.

ROCHESTER, N. Y.—Bridge is to be built over Carroll and Fitzhugh Race at Butts Pl., at cost of $2,500.

SCHENECTADY, N. Y.—Stated that Vischers Ferry Bridge Co. will rebuild their bridge over Mohawk River. Wyncoop & Brawley, representing the New Jersey Bridge Co., have submitted estimates setting the cost at $12,000.

PATERSON, N. J.—Contract for erecting Sumner St. bridge let to F. R. Long Co. The contract for a bridge over canal in Acquackanonk township was let to F. W. S. Sears for $2,924.

ASHLEY, PA.—Bids are asked until June 22 for building concrete bridge over Solomons Creek. D. E. Frederick, Borough Secy.

BRADFORD, PA.—Town has voted on erection of $5,000 bridge.

DOYLESTOWN, PA.—Bids are to be asked by commissioners of Bucks and Philadelphia counties for erecting $40,000 bridge over Poquessing Creek, near Red Lion Hotel in 33d Ward, Philadelphia.

STEELTON, PA.—C. H. Hoffer, Borough Surv., is making plans for the lowering of the Conestoga, Franklin and Trewic St. bridges over the canal.

CUMBERLAND, MD.—Allegheny and Mineral counties may erect $14,000 bridge at Piedmont and $10,000 bridge over Potomac River at Cumberland.

JACKSONVILLE, FLA.—Contract for bridge over Cedar Creek on Orange Park road let to Merrill Steven Co., for $2,250.

NATCHEZ, MISS.—Adams county has issued $4,000 bonds for building two extension spans and for making repairs and approaches.

HARRIMAN, TENN.—Stated that Tennessee Central R. R. will build steel bridge over Emory River at Harriman. W. N. McDonald, Nashville, Tenn., is Ch. Engr.

PIKEVILLE, KY.—Bids are asked until June 30 for building sub and superstructure and approaches for steel, Howe truss and stone arch bridge to be built over Stone, Coal, Tollets and Buckley's Creeks. Leete & McDyer, Cotlettsburg, Ky., Egrs.; W. O. B. Ratliff, County Judge.

EAST LIVERPOOL, O.—Reported that bridge is to be erected from this city to Newell, W. Va. Bridge is to be 1,600 ft. long with an 800-ft. channel span.

ANDERSON, IND.—County will build $35,000 bridge over White River at Delaware St.

GRAND RAPIDS, MICH.—Profile and specifications for the bridge to be built across the Grand River at North Park, between Walker and Grand Rapids townships, for which bids will be opened June 27 by the Committee of Roads and Bridges of Kent County, as stated in our advertising column, may be seen at the office of Engineering News, 220 Broadway, New York. This structure will be 600 ft. in length with a roadway 20 ft. in the clear. L. W. Anderson, Engr.

YPSILANTI, MICH.—Preliminary steps have been taken toward building a $2,400 steel and cement bridge at Forest Ave.

CLINTON, ILL.—Contract for bridge over Coon Creek let to Bornett Bridge & Iron Co. for $1,546.

FREEPORT, ILL.—Contract for bridge in Rock Run township let to Massillon Bridge Co., Massillon, O., for $1,700. Bids for Jefferson bridge were rejected.

MORRISON, ILL.—Contract for bridge over Rock River at Hillsdale let to St. Louis Bridge & Iron Co. for $20,899. Bridge is to be of steel with two 250-ft. spans and 100-ft. approaches.

OTTAWA, ILL.—Illinois Valley Traction Co. has let a $14,000 contract to American Bridge Co., Lafayette, Ind., for all bridge structures between Madison St., this city, and the Marseilles end of the line.

PEKIN, ILL.—Contract for iron bridge over county ditch in Malone township let to Illinois Bridge & Iron Co., Sullivan, Ill., for $1,498.

WAUPACA, WIS.—Bids are asked until June 12 for building stone bridge over Crystal River on Berlin St. J. B. McNaughton, Bd. Pub. Wks.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

BURLINGTON, IA.—Plans are being made to replace wooden extension of Third St. bridge with steel structure E. A. Steece is Cy. Engr.

DES MOINES, IA.—Reports from here state that the Melan arch bridge at 6th St. was damaged to the extent of about $30,000 by the recent flood and that the steel bridge of the Chicago, Rock Island & Pacific R. R., 35 miles below here, was washed out. The loss will be about $12,000.

SIOUX CITY, IA.—J. M. Lewis, Cy. Engr., writes that John W. Towle, Omaha, Neb., at $4,700 was low bidder for building Perry Creek bridge.

KRAGNESS, MINN.—Bids are asked until June 16 for building 200 ft. long, 16 ft. wide, 40 ft. span bridge over Buffalo River. O. E. Tauzen, Chn. Town Bd.

MANKATO, MINN.—Bids are asked until June 22 for construction of steel bridge on stone piers in Ceresco township. Edgar Weaver, County Auditor.——County has appropriated $2,500 toward a $9,000 bridge at Judson.

PILLAGER, MINN.—$1,500 voted for bridge over Crow River.

ALMO, KAN.—Bids are asked until June 20 for abutments for bridge at Kuengli Creek. Henry Sappay, Trus. Mill Creek township.

WAHOO, NEB.—Estimated that $10,000 will be needed to repair county bridges.

KANSAS CITY, MO.—Local reports state that the following bridges near the city were destroyed by the recent flood: Old Southern bridge, connecting Armourdale and Argentine; Union Terminal Railway bridge, between Armourdale and Argentine; 12th St. steel bridge, between Armourdale and Argentine; 5th St. steel bridge, between Armourdale and Greystone Heights; Kansas City Belt Line Ry. bridge, at Shawnee Ave., Armourdale; Kansas Ave. steel bridge between Armourdale and Kansas City; Metropolitan St. Ry. bridge, between Armourdale and Kansas City, at Kansas Ave.; Chicago, Rock Island & Pacific steel railway bridge; stock yards bridge; Missouri Pacific bridge; Union Pacific steel bridge; elevated railway steel double-deck bridge at Central Ave.; Union Terminal Ry. bridge to Ohio Ave., Kansas City, Kan.; James St. wagon bridge; Metropolitan St. Ry. Co.'s steel bridge to Ann Ave., Kansas City, Kan.; Kansas City, Mo., water-works flow line steel bridge; Chicago Great Western Ry. bridge.

ROCKPORT, MO.—Contract for five steel county bridges has been let to John Gilligan Co., Falls City, Mo.

COLORADO SPRINGS, COLO.—County bridge to cost $1,500 will probably be built over Big Sandy, near Ramah.

SEATTLE, WASH.—Seattle & San Francisco Railway & Navigation Co. (owned by Northern Pacific) has filed plans for a permanent steel drawbridge, with concrete piers and abutments, to take the place of the present wooden structure at east waterway, Seattle Harbor.

SPOKANE, WASH.—Contract for bridge over Snake River, at Boone Ave., let to Porter Brothers for about $20,000.——Contract for cement piers at approach of Monroe St. bridge, let to August Ilse for $13,456.

PORTLAND, ORE.—City votes to issue $400,000 of bonds for constructing a steel bridge over Willamette River at Morrison St.——Oregon Railroad & Navigation Co. has let contracts for constructing concrete masonry abutment and piers for 17 bridges to Deeks & Deeks, St. Paul, Minn., and to Smyth & Howard, Portland. There are to be 15 new steel bridges constructed on the line between Walla Walla and Spokane and Umatilla and Huntington, which will cost $70,000 when completed.

REDWOOD CITY, CAL.—Bids are asked until June 15 for constructing concrete arch bridge and fill over Arrayo de en Medio. H. W. Schaberg, County Clk.

PARRY SOUND, ONT.—Bids are asked until June 15 for constructing two concrete piers and abutments for steel bridge over Sequin River. E. E. Armstrong, Town Clk.

BUILDINGS.

AUGUSTA, ME.—Bids are asked until June 17 for completing extensions and alterations to Second Female Wing of the Maine Insane Hospital. G. E. Macomber, Bldg. Com. Coombs & Gibbs, Archs., Lewiston.

ORONO, ME.—Bids are asked until June 20 for erecting superstructure of engineering building for the University of Maine. Thomas & Crowell, Archs., 25 State St., Bangor.

BROCKTON, MASS.—Bids are asked by the High School Building Committee until June 22 for erecting high school building. C. A. Brigham, Arch., 8 Exchange Pl., Boston.

NORWICH, CONN.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until July 6, for erecting U. S. post office, except heating apparatus and electric wiring and conduits. (See advertising columns.)

BINGHAMTON, N. Y.—Bids are asked by board of trustees until July 1 for erecting a fireproof library building. I. T. Deyo, Secy. S. O. & H. A. Lacey, Archs.

BUFFALO, N. Y.—Mosier & Summers, 1260 Seneca St., received contract for erecting a nurses' home at the almshouse, at $60,000.——Adam, Meldrum & Anderson Co. will erect an 8-story fireproof building, 60 × 80 ft., at 219-27 Pearl St. Cost, $117,000.

ITHACA, N. Y.—The Ithaca Odd Fellows will erect a building at 217 North Aurora St. W. L. Jenks, Mem. of Com. Cost, $25,000 to $45,000.

NEW YORK, N. Y.—Bids are asked by the fire department, 157-9 East 67th St., until June 17, for erecting new fire houses at Sheepshead Bay and at Coney Island. Thos. Sturgis, Comr.——Bids are asked by board of health, 55th St. and Sixth Ave., until June 22, for completing storehouse at Riverside Hospital, North Brother Island. E. J. Lederle, Ph. D., Pres.——W. H. Noyes will erect a new 6-story fireproof abattoir, 90 × 106 ft., at 45th St. and First Ave., for the Swift Co. Copeland & Doyle, Archs. Cost, $90,000.——Work will soon start on the Pennsylvania Ry. Co.'s new station at 31st and 33d Sts.——Browning, King & Co.'s new 8-story building adjoining the Union Dime Savings Bank will be of red brick, with limestone and granite trimmings, and be fireproof.——It is proposed to acquire the United Electric Light, Heat & Power Co.'s plant and use it for the site of new Bellevue Hospital buildings.——A syndicate composed of L. M. Goldstein, Chas. Bimberg and others, will erect a new theatre at St. Nicholas Ave. and Hamilton Place. Roman buff brick, limestone and terra cotta will be used. G. E. Harding, Arch., 253 Broadway. Contract let.——$500,000 appropriation made for the street cleaning department, $395,000 of which will be used in erecting a stable.

NE WYORK, N. Y.—Bids are asked by board of education, Park Ave. and 59th St., until June 22 for repairs, electric light wiring, sanitary work, etc., in various schools. C. B. J. Snyder, Supt.

NEW YORK, N. Y.—Bids are asked by department of parks, Fifth Ave. and 64th St., until June 18, for general repairs and alterations in the Metropolitan Museum of Art. J. E. Eustis, Comr.——Bids are asked by police department, 300 Mulberry St., until June 19, for repairing station house and prison of the Seventh Precinct. F. V. Greene, Police Comr.——Various stations of the Manhattan R. R. will be remodeled.

JERSEY CITY, N. J.—The Pennsylvania Ry. Co. will erect a terminal and station for the Hudson & Manhattan Ry. Co. at Montgomery and Greene Sts.

PITTSBURG, PA.—Max Friedman, Pres. Star Enamel & Stamp Co., will erect a 10-story office building at 412-14 Grant St. Cost, $200,000.

PHILADELPHIA, PA.—Charles Gilpin, R. C. Ballinger & Co. and William R. Dougherty will submit estimates to Col. Wendell P. Bowman for rebuilding the First Regiment Armory, Broad and Callowhill Sts.——Fire has destroyed the Front St. Warehousing Co.'s building at 919-25 North Front St. Loss, $1,000,000, including contents.——The Corporation of the College of Physicians will have plans prepared for new building, 80 × 130 ft., on 22d St.

PHILADELPHIA, PA.—Bids are asked for erecting 7-story brick, stone and steel fireproof addition, 120 × 40 ft., to the Medico Chirurgical Hospital. J. H. Windrim, Arch., 1107 Walnut St.——Bids are asked for erecting 3-story stone Home for Aged Veterans and their Wives, 40 × 100 ft., at 65th and Vine Sts. C. W. Bolton & Co., Archs., Witherspoon Bldg.

BALTIMORE, MD.—A 7-story office building for doctors, 40 × 130 ft., will soon be erected at Charles and Mulberry Sts. Cost, $97,000. W. T. Levering is interested.

BALTIMORE, MD.—R. H. Frazier & Son, 220 St. Paul St., received contract for erecting 4-story brick and steel warehouse, 30 × 70 ft., at 706-8 Water St. for A. and G. H. Boehm.

WASHINGTON, D. C.—C. A. Didden & Son, Archs., Corcoran Bldg., are receiving bids for an 8-story brick, stone and steel fireproof hotel at 13th and 14th Sts. for Robt. Portner. Cost, $300,000.——John Horetz, 715 Eighth St., received contract for erecting 3-story brick and stone apartment house, 150 × 200 ft., at 30th and Q Sts., for C. B. Keferstein. Cost, $150,000.

FORT MEYER, VA.—Wm. H. McCray, Atlantic Bldg., Washington, D. C., received contract for 2-story brick and stone post exchange and gymnasium. Cost, $40,000.

NORFOLK, VA.—The alterations to be made on the Tazewell building will cost about $50,000. Messrs. Breeze and Ferguson, Archs., are completing the plans.

FAIRMONT, W. VA.—Holbert & Spedden received the contract for erecting G. M. Jacobs' 5-story office building on Monroe St., at $40,000. A. C. Lyons, Arch.

POTTSVILLE, W. VA.—James Nagle & Son, Allentown, Pa., received contract for erecting the Methodist Church, at $120,000.

FORT CASWELL, N. C.—Bids are asked until June 16 for constructing, plumbing, heating and wiring guardhouse and administration building. Philip Yost, A.A.Q.M.

NEW BERN, N. C.—Bids are asked until June 15 for erecting the new Centenary M. E. Church. Charles G. Jones, Arch., 280 Broadway, New York. H. W. Simpson, Arch., 68 Broad St., New Bern.

SAVANNAH, GA.—Plans have been rejected for the new city hall. An architect will be employed to do the work.

CLARKSDALE, MISS.—Bids are asked until June 15 for erecting St. George's Episcopal Church. Address R. H. Wildberger.

JACKSON, MISS.—The board of supervisors will receive bids until their July meeting for erecting new jail. Hull Bros., Archs. W. W. Downing is Clk.——A new hotel will be erected at Capitol and Congress Sts. at cost of $80,000.

BATON ROUGE, LA.—Bids are asked until June 20 for erecting a 3-story brick building for the State Institute for the Blind. J. Gottlieb, Arch.

JOHNSON CITY, TENN.—W. P. Brownlow, Congressman, will ask for an appropriation of $75,000 for a new government building.——H. Probst, New York, received contract for erecting four barracks at the Soldiers' Home, at $48,000.

CHATTANOOGA, TENN.—Bids are asked until June 15 for erecting a church building. Adams & Bearden, Archs., Chamberlin Bldg. Sol. Moyses, Secy.

MEMPHIS, TENN.—Work will soon start on addition to custom house. Geo. Moore & Bro. received contract.

GLENVILLE, O.—Bids are asked by board of education until June 29 for erecting 12-room brick school building. F. S. Barnum & Co., Archs., Rose Bldg., Cleveland. C. A. Judson, Clk., 815 New England Bldg., Cleveland.

CINCINNATI, O.—The City & Suburban Telephone Co. will erect a telephone exchange building on Canal St.

DAYTON, O.—Bids are asked until June 24 for erecting a new infirmary building for the Dayton State Hospital. F. M. Andrews, Arch., Conover Bldg. A. F. Shepherd, M. D., Secy.

SANDUSKY, O.—Bids are asked by board of trustees until June 18 for completing improvements in four buildings at the State Soldiers' Home. F. L. Packard, Arch., New Hayden Bldg., Columbus.

SPRINGFIELD, O.—Bids are asked by the school board, until July 2, for erecting school building. Robt. C. Gotwald, Arch. J. S. Bird, Clk.

RICHMOND, IND.—S. R. Lyons, 1050 North B St., writes us that the contract for erecting the United Presbyterian Church will probably be let in July. Cost, $85,000.

CHICAGO, ILL.—R. C. Sturgis, Arch., Boston, Mass., is preparing plans for V. F. Lawson's residence at Lake Shore Drive and Burton Place. Cost, $1,000,000.

CHICAGO, ILL.—Bids are asked by board of education, 730 Bribune Bldg., until June 19 for plumbing, gas fitting and sewerage at various schools.

MORRISONVILLE, ILL.—Bids are asked until June 15 for erecting pressed brick bank and office building for the First National Bank. Hot water heating plant will be installed. R. O. Rosen, Supervis. Arch., Review Bldg., Decatur.

PEORIA, ILL.—The Royal Neighbors will erect an office building at cost of $50,000.——Work will soon start on the Creve Coeur Club House. Cost, $100,000.

ST. PAUL, MINN.—The new armory, 3-story, 120 × 140 ft., at Sixth and Exchange Sts. will cost about $99,000. Stone will probably be used.

STILLWATER, MINN.—Bids are asked until June 22 for erecting new public building. Postmaster Easton has plans.

HOT SPRINGS, ARK.—Bids are asked until June 18 for constructing city hall and auditorium. Cost, $75,000. W. E. Russell, Arch., St. Charles Hotel.

DEADWOOD, S. D.—The new federal building will cost $170,000. Work will soon start. J. D. Elliott, U. S. District Atty., Sioux Falls, is interested.

YANKTON, S. D.—Bids are asked by board county commissioners until June 23 for erecting new court house. C. L. Lawrence, County Audr. W. R. Parsons & Son Co., Archs., Des Moines, Ia.

KANSAS CITY, MO.—A. Van Brunt & Bro., Archs., write us that G. L. Brown & Son received contract for erecting the Harvey Dutton Dry Goods Co. 7-story building, 50 × 108 ft., of mill construction, at $40,000. Heating, elevator and plumbing contracts let.

LITTLE ROCK, ARK.—Work will soon start on office building to be erected by Dugan & Stewart. Cost, $100,000.

FORT CLARK, TEX.—Bids are asked until June 19 for constructing post exchange and gymnasium building. J. L. Clem, Q. M.

GALVESTON, TEX.—J. W. Thompson, St. Louis, received contract for erecting brick and fireproof addition, 72 × 325 ft., to the Galveston, Houston & Henderson Ry. Co.'s freight depot, at $30,000.

WACO, TEX.—Bids are asked by James Knox Taylor, Supervis. Arch., Treas. Dept., Washington, D. C., until July 8, for extending court house, post office, etc., including plumbing, heating apparatus, electric conduits and wiring. (See advertising columns.)

DENVER, COLO.—Dr. J. C. Bancroft is preparing plans for a hospital for consumptives on the boundary between Arizona and New Mexico. The hospital will care for those who are unable to pay their own expenses.

PORT ANGELES, WASH.—The St. Louis & Port Angeles Investment Co. will erect a 3-story brick hotel.

SEATTLE, WASH.—Plans have been prepared by W. D. Kimball, Arch., for adding three stories to the Cataract building. Elevators will be installed.

ASHLAND, ORE.—F. C. Clark, Arch., has drawn plans for the new normal school building.

ATHENA, ORE.—Bids are asked for erecting a brick and stone church for the Methodists. C. E. Troutman, Arch.

PORTLAND, ORE.—L. B. Stearns has been granted a permit for erecting a 4-story brick building. Cost, $75,000.——Work will soon start on the Marshall-Wells Co.'s 6-story brick building on Pine St., to cost about $75,000.

PORTLAND, ORE.—Richard Nixon will erect a 3-story brick building at cost of $75,000.

SALEM, ORE.—Bids are asked by board public building committee, Capitol Bldg., until July 6, for lighting various buildings with incandescent lamps.

BERKELEY, CAL.—J. G. Howard, Supervis. Arch., University of California, will prepare plans for the First National Bank's 5-story building at Shattuck Ave. and Center St. Cost, $75,000.

LOS ANGELES, CAL.—J. R. Toberman has furnished funds for erecting a hospital on Sunset Boulevard for the South Methodist deaconesses.

OAKLAND, CAL.—Reports state that J. G. Howard, Supervis. Arch. University California, will prepare plans for a brick city hall to cost $50,000.

COLTON, CAL.—A 2-story brick block will be erected by Samuel Baylis.

SAN FRANCISCO, CAL.—Bids are asked until June 15 for erecting an operating pavilion at the General Hospital at the Presidio. C. P. Miller, C. Q. M.——The contemplated improvements of remodeling the Tivoli Opera House will cost between $75,000 and $100,000. W. H. Leahy, Mgr.——Zellerbach & Levison will erect a 4-story apartment house, 69 × 137 ft. on Sacramento St. Cost, $65,000. C. J. Rousseau, Arch., 916 Market St.

SALT LAKE CITY, UTAH.—Jas. H. Pulley, Arch., has submitted plans for the new city hall. They were accepted.

VICTORIA, B. C.—Competitive plans and specifications will be received until June 13 for public library. W. J. Dowler, Cy. Clk.——Sir Thomas Shaughnessy, Pres. Canadian Pacific Ry. Co., offers to construct palatial tourist hotel to cost not less than $300,000 on the mud flats, provided that certain conditions are subscribed to. These are the gaining of a free site, free water rights and its exemption from taxation for 20 years.

PARIS, ONT.—Bids are asked until June 13 for the masonry, carpentry and structural ironwork of a Y. M. C. A. building. Gordon & Helliwell, Archs., Confederation Life Bldg., Toronto.

MONTREAL, QUE.—Henry Morgan & Co. will enlarge their building in St. Catherine St. The framework will be of steel and the facade of red brick.

BONDS.—Seatle, Wash., may issue $140,000 for the purchase of a site for new city hall.——$250,000 will probably be issued by Spokane, Wash., for new school buildings.——Bids are asked by Colfax, Wash., until June 23, for the purchase of $10,000 school bonds. L. E. Allen, Treas.

WATER SUPPLY AND IRRIGATION.

NANTUCKET, MASS.—Town authorized to supply Liasconset district with water.

WAKEFIELD, MASS.—Stated that Committee on Water Supply will recommend purchase by town of plant of Wakefield Water Co.

WILLIAMSBURG, MASS.—We are informed that contracts for about 660 tons 4, 6, 8 and 12-in. iron pipe and 10 tons specials has been let to Chas. Miller & Son Co., Utica, N. Y.; contract for 53 hydrants and gate valves was let to Norwood Engineering Co., Florence, Mass. J. Vaughan, Stamford, N. Y., received contract for constructing two dams and laying pipe, etc. H. C. Smith, Chn. Selectmen.

BATAVIA, N. Y.—We are informed that the Horse Shoe Lake Improvement Co. has organized the Horse Shoe Lake Water Co., with $125,000 capital, and is negotiating with Batavia, Lockport, Medina, Albion, Oakfield and Middleport for furnishing pure water. Lina Beecher, Asst. Mgr.

FISHKILL, N. Y.—Premises of Fishkill & Matteawan Water Co. are to be sold at auction June 26; lowest bid that will be accepted is $60,000.

HORSEHEADS, N. Y.—Bids are asked for supplying village with water and light and if satisfactory arrangements can be made franchise will be granted. R. G. Eisenhart, Pres. (See advertising columns.)

LOCKPORT, N. Y.—Bids for supplying city with water received from Western New York Water Co. and Horse Shoe Lake Water Co., Batavia, N. Y.; the latter company offered water for 10 cents per 1,000 gallons and the former would furnish 2,000,000 gallons a day for 8 cents a gallon.

NEW YORK, N. Y.—Bids are asked by Commissioner Water Supply, Gas and Electricity until June 16 for remodeling and extending the Watts Pond pumping station and the Wantagh pumping station; also for furnishing and laying 48-in. trunk water main at Ridgewood reser-

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

voir in Cypress Hills, Myrtle Ave. and Broadway. Bids are also asked until June 18 for stop cocks and hydrants for water mains in Lenox Park and Vanderbilt Aves. and the other streets, and for installing new boilers and appurtenances at Bayside and Flushing pumping stations. Robt. Grier Monroe, Comr.

AVON, N. J.—City council has authorized construction of water and sewer systems. P. O., Avon by the Sea.

BERNARDSVILLE.—N. J.—A new franchise has been granted the Bernardsville Water Co., recently organized by S. S. Childs and others.

BRIDGETON, N. J.—New water supply being sought.

JERSEY CITY, N. J.—Jersey City Water Supply Co., E. W. Harrison, Ch. Engr., has offered to put in the 20-in. connections in the new water pipe on the east side of the Hackensack River, so that a new pipe may run under the river at any time. The cost would be about $3,000.

COOPERSBURG, PA.—Specifications are on file at office Engineering News, 220 Broadway, New York, for water distributing system at this place, bids for the construction of which are called until June 15, as was stated in our advertising columns June 4.

HARRISBURG, PA.—We are informed that surveys are being made and plans prepared for water-works improvements. M. B. Cowden is Cy. Engr.

MIDDLEBURG, PA.—We are informed that material for complete gravity water plant will be wanted in August. The works are to be built by H. G. Frederick, Middleburg, Pa., to whom a franchise has been granted. M. M. Drebellis, Harrisburg, Pa., is Des. Engr.

MT. PENN, PA.—We are informed new gravity water works here are to consist of a reservoir, 2½ miles 6-in. pipe and no fire plugs. Population is 500. M. L. Butolette, Pres. Council. P. O., Reading.

PITTSBURG, PA.—Council Filtration Committee, Thos. M. Brown, Chn., has been considering methods of filtering water supply. A sand filtration plant is said to be preferred.

READING, PA.—Bids are asked until July 7 for a 15,000,000-gallon vertical triple expansion, condensing Crank and fly wheel pumping engine; also for furnishing four water tube boilers of 175 HP. each. Emil L. Mubling, Supt. W.-W.; Geo. H. Felix, Secy. Water Coms. (See advertising columns.)

WASHINGTON, D. C.—Bids are asked by the District Commission until June 20 for furnishing 8-in. and ½-in. cast-iron water pipe. Harry B. F. Macfarland, Comr. (See advertising columns.)

WASHINGTON, D. C.—Bids are asked by the district commissioners until June 13 for furnishing 20-in. cast-iron water pipe. Henry B. F. Macfarland, Comr. (See advertising columns.)

WASHINGTON, D. C.—Bids are asked until July 15 for constructing about 15 miles of canals, with diverting dam, headworks, spillway and tunnel for conveying water from Truchee River to irrigate lands in Truchee and Carson Valleys. E. A. Hitchcock, Secy. Interior. (See advertising columns.)

BRISTOL, VA.—Stated that city will spend $10,000 in improving its water supply.

HOLLINS, VA.—John N. Ambler, Hydr. Engr., Salem, Va., is designing gravity system of works for this place to consist of 6,500 ft. 6-in. mains, distribution pipe, fire hydrants, etc., and a 125 ft. long 16 ft. high masonry dam.

LYNCHBURG, VA.—Plans for gravity water supply for city contemplates 60-ft. dam and about 22 miles of water pipe, 10 miles of 36-in. wood stave, 2 miles 30-in. cast iron and one mile of 30-in. riveted steel. A $700,000 bond issue for the work will be voted on June 18. H. L. Shaner, Cy. Engr.

NORFOLK, VA.—Water board will recommend putting in of new 30-in. mains. H. L. Smith is Supt. W.-W.

SALEM, VA.—John N. Ambler, Hydr. Engr., Salem, has been employed to make surveys and plans for a gravity water-works system for this city.

MT. AIRY, N. C.—We are informed that bids will soon be wanted for water-works and an electric light plant. There will be two miles of spiral steel riveted pipe, four miles of c.-i. pipe, etc. J. A. Headley, Mayor; J. W. Hays, of Petersburg, Vt., is Engineer.

WILMINGTON, N. C.—Wm. F. Robertson, Supt., Clarendon W.-W. Co., writes us that new pump 2,750,000 gallons' capacity has been bought from Henry R. Worthington and is to be delivered July 1.

WINSTON SALEM, S. C.—Robt. P. Henry, Cy. Engr., writes us that surveys are being made for a new water supply and will supplement the present plant. The source is from Frazier's Creek, and plans at time of writing, June 3, were not complete.

HAWKINSVILLE, GA.—Arthur Pew has been engaged to make plans and superintend construction of water-works and sewerage, for which work city has voted $40,000 of bonds.

ALEXANDER CITY, ALA.—$20,000 works voted for.

GULFPORT, MISS.—City will have $40,000 works.

TUPELO, MISS.—City to have works and sewerage.

CHATTANOOGA, TENN.—The following bids were received for water system at the army post: A. L. Patterson & Co., of Macon, Ga., $33,000; T. J. Mooney Co., of Nashville, Tenn., $31,800; Dyer & Duncan, of Chattanooga, Tenn., $49,683.

NAPOLEON, O.—New water power arrangement is to be installed at the water-works. W. F. Clark is Supt.

NEW BREMEN, O.—Stated that bids received for water-works exceeded money available by $6,000, and that Board of Public Affairs will call for a second estimate on modified plans.

TOLEDO, O.—We are informed that plans have been made for a 20-in. submerged pipe line, but that nothing further has been done. The matter will probably be taken up by the Board of Public Service in a short time. S. R. Cook, Supt. W.-W.——The Board Public Service has rejected bids received for 400 water meters and will readvertise for a larger quantity, probably 1,500. Bids received at first ranged from $7.60 to $8.40.

EXIRA, IA.—Mayor Geo. F. Kapp writes us under date of June 6 that they are open for bids for building a steel stand-pipe 12 ft. diameter and 40 ft. high; will also extend mains 700 ft., 4-in. galvanized iron pipe, and erect 3 hydrants; estimated cost, $2,000. Bonds to value of $2,500 have been voted, but have not yet been sold.

SIOUX CITY, IA.—We are informed that the estimated cost of the extensions by the city water-works is $275,000. Two 3,000,000 gallons each pumps are to be put in, also a 100-ft. high stand-pipe and 2,100 tons cast-iron pipe for mains and specials. T. W. Cappelen, 501 Oneida Block, Minneapolis, Minn., is Des. Engr. G. B. Healy, Pres. Bd. Trustees.

ELLENDALE, MINN.—Contract for complete works let to National Construction Co., South Bend, Ind., for $6,650.

SIOUX FALLS, S. DAK.—City votes for works.

CAMERON, MO.—We are informed that plans and specifications have been made and that city votes June 13 on issue of $50,000 of bonds for proposed new works. Hiram Phillips, City Hall, St. Louis, Mo., is Des. Engr. O. M. Young, Mayor.

SAN SABA, TEX.—C. E. Coon & Co., Houston, Tex., has been awarded a contract for constructing irrigation works. The contract involves about $500,000, and about 176 miles of laterals, canals, etc., will be built.

LONGVIEW, TEX.—Private works to be put in.

WACO, TEX.—Water contract to be renewed with Bell Water Co., or if this cannot be done, new works may be erected by city.

CHICKASHA, IND. T.—City to have works and sewers.

GRAND JUNCTION, COLO.—City said to be considering filtering of water supply.

HOTCHKISS, COLO.—Estimated that town works will cost about $35,000.

TRINIDAD, COLO.—$5,000 has been appropriated for test well to be sunk near Hoehne. C. W. Wells is Asst. State Engr.

OROFINO, WASH.—F. M. Mitchell, Grangeville, Wash., may install works here.

SEATTLE, WASH.—Contract for water main on 29th Ave. let to Stirrat & Goetz for $3,213.

NEVADA CITY, CAL.—Stated that the South Yuba Water Co. is planning changes in its water system.

PORTERVILLE, CAL.—A. S. Adams, 420 California St., San Francisco, Cal., is said to have been engaged on plans for works to be put in here by the Pioneer Land Co.

SALT LAKE CITY, UTAH.—We are informed that a report has been made to city council recommending the construction of a 5,000,000-gallon distributing reservoir in City Creek Canyon; estimated cost, $45,000. L. C. Kelsey, Cy. Engr.

TUCSON, ARIZ.—Contract for 4,000,000-gallon pumping engine let to Tracy Engineering Co., San Francisco, Cal., for $17,180.

SHERBROOKE, QUE.—Stated that council is to buy new 1,500,000-gallon pumping engine and improved turbine.

FORT WILLIAM, ONT.—City will construct works after plans of Willis Chipman, C. E., Toronto, Ont.

NIAGARA FALLS, ONT.—Bids are asked until June 25 for a 3,000,000-gallon double plunger duplex pump. John Robinson, Supt. W.-W.

OTTAWA, ONT.—Engineer Ker has recommended that a reservoir be constructed as auxiliary to the pumping station.

STRATHROY, ONT.—Contract for water-works here let to Harding & Lathorn, London, Ont.; works will cost $30,000 or $40,000.

ST. JOHNS, ORE.—Works are to be put in. C. D. Hughes is Chn. Water Com.

BONDS.—Salem, Ga., will vote on bond issue for water-works.——Floresville, Tex., votes June 12 on issue water-works bonds.——Havre, Mont., will vote on $30,000 bond issue for water and sewer systems.——Onaway, Mich., votes June 12 on $18,000 water-works improvement bonds.——Monroe, Ga., may vote bonds for works.——Hawkinsville, Ga., has voted $40,000 of bonds for water-works and sewers.——Atlantic City, N. J., will sell June 22 $75,000 water bonds.——Wiarton, Ont., will vote on issue of $18,000 water-works improvement bonds.——Yuma, Ariz., will vote on issue water-works construction bonds.——Chickasha, Ind. T., will issue $135,000 bonds for water-works and sewerage.——Tupelo, Miss., votes $60,000 of bonds for construction water-works and sewers.——Columbus, Ga., will receive bids until Aug. 1 for $250,000 water bonds.——St. Cloud, Minn., through Henry J. Limperich, Cy. Clk., will receive bids until June 15 for $100,000 water-works improvement bonds.——Dexter, Me., by C. D. Roberts, Town Treasurer, will receive bids until June 13 for $148,000 water bonds.——Taylor, Tex., will vote on issue water-works purchase bonds.——Alexandria City, Ala., will issue $20,000 water-works construction bonds.

SEWERAGE.

PRESQUE ISLE, ME.—Sewer system being considered.

PORTLAND, ME.—The sewer in Adams and Waterville Sts. will be rebuilt at cost of $3,000.

FAIRHAVEN, VT.—Golden & Hall, Troy, New York, received contract for constructing sewer system, at $33,389.

EASTHAMPTON, MASS.—Sewer system will cost about $40,000.

FITCHBURG, MASS.—Sewer system contemplated. Alderman G. H. Johnson is Mem. of Sewer Com.

LOWELL, MASS.—A sewer will be constructed in High St. The Norcross St. sewer will cost $3,321. Petitions presented for sewers in various streets.

NEW BEDFORD, MASS.—$12,000 appropriated for sewers in four streets.

SALEM, MASS.—W. H. Hall, Chn. Sewer Com., writes us that an appropriation of $90,000 has been made to commence deep sea disposal of sewage.

SUNDERLAND, MASS.—The bids received for the construction of the sewer varied from $7,500 to $11,000. Being too high, all were rejected.

TAUNTON, MASS.—Bids are asked by board sewer commissioners until June 15 for constructing sewer in section of Winthrop St. H. S. Culver, Comr.

WESTBORO, MASS.—D. A. Dorey & Co. received contract for finishing sewer work at the Westboro Insane Hospital. Contract comprises about 4,000 ft. of iron pipe.

WESTERLY, R. I.—S. M. Gray, Engr., Providence, recommends sewage system and storm water drains.

BATAVIA, N. Y.—An election will be held June 15 to decide upon appropriating $20,000 for sewers. Mayor Burkhart is interested.

BROOKLYN, N. Y.—Bids are asked by the Borough President, Municipal Bldg., until June 24 for constructing sewer basins.

BUFFALO, N. Y.—A sewer from the steel plant to Niagara Falls is being discussed.

NEW YORK, N. Y.—Bids are asked by the president of the borough, City Hall, until June 16 for constructing about 2,223 ft. of brick sewers.

OSWEGO, N. Y.—Sewer for West Fifth St. is opposed.——Cost of sewer in Varick St. is $5,749.

RIPLEY, N. Y.—Sewers contemplated in Federal and Murdock Sts. and Woodland Av.——Sewers will be constructed in Wiseman and McKinnie Sts.

SAG HARBOR, N. Y.—The question of sewering Main St. is being agitated. Cost of sewering entire village, $60,000.

WATERTOWN, N. Y.—Sewer system will be constructed.

CAMDEN, N. J.—See Streets and Roads.

BORDENTOWN, N. J.—Board of Health discussing sewer system.

HOBOKEN, N. J.—Sewers will be constructed in eight streets at cost of $80,000. It is also desired to construct relief sewers at cost of $142,000.

PLAINFIELD, N. J.—Plans have been completed for storm sewer in Willow and Myrtle Aves.

SUMMIT, N. J.—Bids will soon be asked for constructing sewer. Edw. D. Rich is Cy. Engr.

INGRAM, PA.—Bids are asked until June 18 for constructing about 6,186 ft. of 24-30-in. pipe sewer. John McBride, Engr.

NORRISTOWN, PA.—Bids are asked until June 24 for constructing sanitary sewer in Swede St. Wm. J. Wells, Chn. Sewer Com.; S. Cameron, Engr.

JERSEY SHORE, PA.—A bidding sheet for the sewer contract to be let on June 24 may be seen at the office of Engineering News, 220 Broadway, New York. The work calls for 10,555 ft. of 8 to 18-in. pipe sewer and 5,000 ft. of 4-in. house connections. M. I. Sallida, Pres. Council (See advertising columns.)

YORK, PA.—Herring & Fuller, Engrs., New York, have completed plans for sewer system. Bids will soon be asked. Robt. McKinnon is Cy. Engr.

ANNAPOLIS, MD.—New sewers will be constructed. Mayor Du Bois interested.

BALTIMORE, MD.—A company may build sewer system. Jacob Blaw is interested.

CHARLESTON, S. C.—Dr. J. M. Green, health officer, emphasizes the need of a sewer system.

ATLANTA, GA.—R. Clayton, Cy. Engr., writes us that bids are asked until July 20 for extending trunk sewers.

NASHVILLE, TENN.—Foster & Creighton received contract for constructing the 20-ft. brick sewer through the Murphy property, at $39,695.

AKRON, O.—Bids will soon be asked for sewers in various streets.

CINCINNATI, O.—Bids are asked until June 18 for constructing sewers in Columbia, Rice, Chill and Loth Sts. G. F. Holmes, Cy. Clk.

COLUMBUS, O.—Sewers will be constructed and sewage pumping station erected.

NEW ALBANY, IND.—B. T. J. Juep, Engr., Indianapolis, will prepare plans and specifications for sewer system.

RUSHVILLE, IND.—A. L. Stewart, Cy. Engr., has completed surveys for sewer system.

GRAND RAPIDS, MICH.—Cost of constructing septic tank at the Soldiers' Home is $5,000.

DANVILLE, ILL.—The sum of $20,000 appropriated for sewer in Seventh Ward.

PARIS, ILL.—Bids are asked by board local improvements until June 20 for constructing 10,000 ft. of sanitary sewers, as stated in our advertising columns. D. H. Sawyer, Cy. Engr.; Z. T. Baum, Pres.

MILWAUKEE, WIS.—Septic sewer tanks recommended at cost of $50,000.

HIBBING, MINN.—The sewer and water mains will be extended.

MINNEAPOLIS, MINN.—The state drainage board appropriated $7,000 for completing ditches in Red River valley.

ST. PAUL, MINN.—Bids are asked by board of public works until June 15 for constructing sewer in Fairfield Ave. R. L. Gorman, Clk.

WINONA, MINN.—G. P. Coleman, Cy. Engr., writes us that bids are asked until June 22 for constructing 2,540 ft. of 28-36-in. pipe or brick storm water sewer.

ABERDEEN, S. D.—James Kennedy, Fargo, received contract for sewer extension, at $17,000.

HAVRE, MONT.—Sewer system will probably be constructed. Cost, $10,000.

EL PASO, TEX.—City Engineer Wimberley's estimate for constructing sewer system is $60,371.

OVERLAND, COLO.—A 16-in. pipe sewer will be constructed at cost of $7,000.

LOVELAND, COLO.—J. C. Whedbeg, Fort Collins, received contract for constructing about 8,000 ft. of 8-in. sewers, at $4,500.

BLAINE, WASH.—Bids are asked until June 22 for constructing 6-in. pipe sewer. R. J. Glen, Cy. Clk.

COTTAGE GROVE, ORE.—A sewer system will be constructed. C. M. Collier is interested.

OREGON CITY, ORE.—W. E. Riner, Portland, received contract for building sewer in sewer district No. 3, at $15,302.

BERKELEY, CAL.—Sewers will be constructed in West, Graystone, Tremont, Florence and Camelia Sts. E. Q. Turner is Supt. of Sts.

MARYSVILLE, CAL.—A complete sanitary sewer system may be constructed at cost of $64,000.

NEW CASTLE, CAL.—A new sewer is being considered.

SAN FRANCISCO, CAL.—Marsden Mason, Comr. Bd. Pub. Wks. recommends appropriating $68,592 for sewer work.——An 8-18-in. pipe sewer will be constructed in Paris St. and China Ave. Chas. Fay is Clk.

VANCOUVER, B. C.—Reports from here state that North Vancouver council is calling for bids until Aug. 1 for installing works.

BONDS.—Bids are asked by Lancaster, Pa., until July 1, for purchasing $191,000 sewer and water bonds. J. H. Rathfor, Compt.——Election will be held by Cottage Grove, Ore., to decide upon issuing sewer bonds.——El Paso, Tex. may issue $65,000 sewer extension bonds.——Lewistown, Mont., contemplates issuing $10,000 sewer bonds.——$40,000 bonds will be issued by Marshfield, Wis., for sewer system.——Ann Arbor, Mich., will issue $20,000 for sewer connections.——$25,000 may be issued by Tamaqua, Pa., for extending sewer system.——Sharon, Pa., will issue $80,000 to complete sewer system.

GARBAGE DISPOSAL—STREET CLEANING

BUFFALO, N. Y.—The following bids were received May 29 for collection and disposal of garbage; (1) bid per month for five-year term, (2) Price per ton garbage, (3) per cu. yd. ashes, (4) per cu. yd. refuse, (5) for city wagons; all bidders from Buffalo: H. F. Burgard, 500 Walden Ave., (1) from $12,750 to $15,750, (2) $1.55, (3) 0.35,

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

(4) 0.35, (5) $3,200; Master and Summers, 1200 Seneca St., (1) $13,750, (2) $1.85, (3) 0.375, (4) 0.375, (5) $3,500; John Gallivan, (2) $1.78, (3) 0.38, (4) 0.38.——For collection and disposal of ashes and refuse the following bids were received: Buffalo Sanitary Co., 306 D. S. Morgan Bldg. (2) $2.19, (3) 0.31, (4) 0.375, (5) $3,000; Thos. H. McDonough, 1001 Prospect Ave., (2) $2.30, (3) 0.35, (4) 0.35, (5) $2,000. In addition the Baynes Garbage Reduction Works offered to dispose of the garbage for five years for a total of $92,950, or for .79 per ton. The Buffalo Sanitary Co. also offered to operate the refuse utilization plant for $800 per month.

NEW YORK, N. Y.—Contract for removal of snow and ice for next winter has been let to William Bradley at an average rate of 15 cts. a cu. yd.

CLARKSBURG, W. VA.—Dixon Garbage Crematory Co., Toledo, O., has contract for garbage crematory here.

CLEVELAND, O.—Wm. Carter, Cy. Engr., and Board Public Service are working on plans for municipal reduction plant.

DAYTON, O.—Edison Reduction Machinery Co., Cleveland, O., has submitted plans for garbage reduction plant here.

TOLEDO, O.—Board Public Service authorized to expend $5,000 for handling garbage.

STREETS AND ROADS.

BURLINGTON, VT.—The Williston road will be improved; $9,000 available.

ABINGTON, MASS.—$4,000 will be spent on the extension of the state road betwen Brockton and this place.

ANDOVER, MASS.—The state highway will be extended 3,000 ft. at a cost of $6,000.

BOSTON, MASS.—McGawley & Coughlin received contract for paving Massachusetts Ave. with granite blocks, at $11,047.

CHELSEA, MASS.—Second St. will be paved with granite blocks.

DIGHTON, MASS.—$8,300 appropriated for macadamizing the Taunton and Providence turnpike.

FITCHBURG, MASS.—Bids are asked until June 15 for paving with granite blocks. D. A. Hartwell, Cy. Engr.

FRANKLIN, MASS.—The state highway commissioners have appropriated $6,635 for building one mile of road.

FITCHBURG, MASS.—Bids are asked by board of street commissioners until June 15 for furnishing granite paving blocks. D. A. Hartwell, Clk.

HARWICH, MASS.—Bids are asked by the highway commission, 20 Pemberton Square, Boston, until June 11 for building about 8,450 ft. of state highway. Harold Parker, Comr.

LOWELL, MASS.—Another appropriation of $10,000 has been made for building the state highway.

PITTSFIELD, MASS.—Appropriation of $5,000 made for state highway.

WORCESTER, MASS.—The sum of $10,000 will be spent on the Holden road.

ALBANY, N. Y.—The following bids were received by State Engineer and Surveyor, among the first lot, on June 8, 1903, for the construction of New York state roads. This work was advertised in Engineering News, and was described in detail in our issue of June 4. The figures given are in the lump sum, as no itemized bids were called for. The remainder of the bids were received by the State Engineer on June 10; those with (*) were rejected:

Bids Submitted June 8, 1903, for the New York State Roads.

Road No.	
72—C. H. Querum	$16,364
J. W. Cronin	19,000*
126—Thomas & Brown	16,800*
127—(No bidder).	
128—Mosher & Somers (local stone)	50,100*
Mosher & Somers (trap rock)	62,000*
Board of Supervisors Erie county	50,400
129—Henry P. Burgard	25,000
Henry P. Burgard (Lockport limestone)	22,000
German Rock Asphalt Co. (Ltd.) (Lockport limestone)	23,443
Board of Supervisors of Erie county	23,000
130—Henry P. Burgard	32,000*
Casey & Murray	30,500
Board of Supervisors of Erie county	34,500
Chambers & Grady	33,934*
131—Henry P. Burgard	36,750
Chambers & Grady	40,826*
Casey & Murray	35,200
Board of Supervisors Erie county	40,000
132—John W. Cronin	8,629*
133—F. N. Lewis	17,998*
Thomas H. Karr	18,700*
Casey & Murray	18,000*
Joseph Walker	16,490
McCagney & Lenehan	20,375
Hallinan Bros.	17,744
134—Thomas & Brown.	19,100*
135—Thomas H. Karr	27,900
Bellew & Merritt Co.	28,598
J. E. Martin	28,959*
Harry L. Smith	35,000
Frank Pidgeon	26,879
136—Board of Supervisors Clinton county	13,300
Buckley Construction Co.	12,687
James S. Rogers	13,700*
137—Board of Supervisors Clinton county	34,500
Buckley Construction Co.	33,487
Thomas & Brown	33,490
Bellew & Merritt Co.	51,637*
W. A. Burnham	33,750
Joseph Walker	32,290
Chambers & Grady	34,151
Casey & Murray	31,900
138—Bellew & Merritt	76,892*
Board of Supervisors Clinton county	58,300
Buckley Construction Co.	57,450
Chambers & Grady	54,416
Casey & Murray	51,500
Joseph Walker	53,390
139—Harry L. Smith	9,750*
140—J. W. Cronin	16,500*
Harry L. Smith	22,000*

BUFFALO, N. Y.—The following bids for repaving were found to be the lowest by Col. Ward, Comr. Pub. Wks.: Vermont St., H. P. Burgard, $3,100; Cleveland Ave., Gerrock A. & S. Co., $9,172; and 16th St., Eastern Const. Co., $4,850.

BUFFALO, N. Y.—Bids are asked by board public works until June 18 for paving and repaving various streets. F. G. Ward, Comr.

HAMBURG, N. Y.—Bids are asked until June 30 for constructing 14,717 sq. yds. brick pavement and macadamizing three streets. E. G. Nott, Village Clk.

ROCHESTER, N. Y.—The Rochester Vulcanite Co. received contract for paving Almira St., at $8,235.

ROME, N. Y.—The Barber Asphalt Co. received contract for paving two streets, at $65,000.

CAMDEN, N. J.—Bids are asked by committee on streets and highways until June 16 for paving and draining. Chas. H. Ellis, Chn.

NOTES ON THE MANALAPAN AND FREEHOLD ROAD WORK.—Monmouth County, N.J., as stated in our advertising columns, bids will be received until June 15 on the First Section of this road. The work will consist of 15,000 cu. yds. of earth excavation, 7,500 ft. of tile drains, and 23,940 sq. yds. of macadam 10 ins. thick before rolling. There is a Second Section of this road not yet advertised, consisting of 30,000 cu. yds. of earth excavation, 27,838 sq. yds. of macadam and 1,500 ft. of tile drain. The two sections will make a road 6.3 miles long, of macadam 14 ft. wide. Peter Forman, of Manalapan, N. J., is the engineer. Specifications may be seen at our office.

BUTLER, PA.—$40,000 will be spent on paving and constructing sewers.

CANONSBURG, PA.—O. K. Taylor, Jr., Cy. Engr., is preparing plans for street paving. Contract will soon be let.

WASHINGTON, D. C.—Bids are asked until June 20 for grading and regulating suburban streets and avenues. B. B. F. Macfarland, H. L. West, John Biddle, Comrs. (See advertising columns.)

AUGUSTA, GA.—The following bids have been received for paving Broad St.: Geo. M. Critchfield, New York, $62,480; Fleming & Twiggs, Augusta, $67,305; Green River Asphalt Co., New York, $69,347; Southern Paving & Const. Co., Chattanooga, Tenn, $71,030. Brick—Georgia Vitrified Brick & Clay Co., Augusta, $79,786; Southern Paving & Const. Co., Chattanooga, Tenn., $99,573. Bituminous macadam—Warren Bros. & Co., New York, and Boston, $76,400. Belgian block—W. F. Bowe, Augusta, $94,658.

SHREVEPORT, LA.—Bids are asked until June 26 for 90,000 sq. yds. of brick and asphalt paving, as stated in our advertising columns. C. G. Rives, Comptroller. A copy of the Shreveport "Caucasian," in which is given the specifications for this work, may be seen at the office of Engineering News, 220 Broadway, New York. Wilkie Woodard, Cy. Engr.

LOUISVILLE, KY.—J. B. F. Breed, Ch. Engr., writes us that bids are asked until June 17 for paving about 38,563 sq. yds. with asphalt on Broadway. Estimated cost, $95,000.

BRYAN, O.—Bids are asked until July 2 for constructing about 47,167 sq. yds. of brick pavement on Main, High, Butler and other streets, as stated in our advertising columns. J. W. Hoke, Village Clk.

CINCINNATI, O.—Bids are asked by board public service, until June 24 for paving Brennen St. with asphalt. G. F. Holmes, Clk.

CINCINNATI, O.—Asphalt and brick will be used in paving 12 streets.

CINCINNATI, O.—Bids are asked until June 29 for paving Columbia Ave. with brick. G. F. Holmes, Cy. Clk.

CLEVELAND, O.—Bids are asked until July 1 for grading, paving and draining West Madison Ave. J. C. Dorn, Clk.——Bids will soon be asked for paving 33 streets and alleys with brick.

COLUMBUS, O.—Bids are asked until June 25 for paving and constructing sidewalks on bridge on Cleveland Ave. L. E. Jones, County Audr.

COLUMBUS GROVE, O.—Sycamore St. will be paved with brick or block.

DAYTON, O.—Cincinnati St. and Wayne Ave. will be paved with brick. C. P. Floyd is Clk.

GREENVILLE, O.—Bids will soon be asked for paving East Fourth St.

LANCASTER, O.—Wheeling St. will be paved with brick.

LIBERTY, O.—Bids are asked until June 19 for constructing roads. J. C. Friend, Clk.

BLOOMINGTON, IND.—D. A. Rothrock, Cy. Engr., writes us that bids are asked until June 16 for 4,900 sq. yds. brick pavement and 3,660 sq. yds. macadam pavement.

INDIANAPOLIS, IND.—Bids are asked by board public works until June 17 for improving Larch St. by grading, curbing, etc. H. C. Megrew, Bd. Pub. Wks.

LAFAYETTE, IND.—Bids are asked until June 22 for improving 20th St. by grading. Chas. F. Williams, Jr., Cy. Clk.

LAFAYETTE, IND.—Bids will be opened June 15 for constructing roadway by R. M. Smock. Commandant, Soldiers' Home Sta.

LEBANON, IND.—Bids are asked until June 22 for constructing brick or cement sidewalks on Busby St.

CHARLEVOIX, MICH.—Bids are asked until June 18 for paving 6,500 sq. yds. with brick or bitulithic pavement. W. H. McCartney, Village Clk. (See advertising columns.)

DETROIT, MICH.—G. E. Curry received contract for paving various streets.

GRAND RAPIDS, MICH.—County Surveyor Williams' estimate for driveway from Turner St. to Mill Creek is $6,000.

LA CROSSE, WIS.—Bids are asked by board public works until June 23 for macadamizing 29,329 sq. yds. and constructing 6,096 sq. ft. of concrete sidewalks. L. Holmes, Compt.

ST. PAUL, MINN.—Fielding & Shepley submitted the lowest bid for paving Mississippi and East Seventh Sts. with brick, at $42,200.——Cement sidewalks will probably be laid.

CHANUTE, KAN.—Bids will soon be asked for paving Highland and Lincoln Aves. with brick.

ST. LOUIS, MO.—Forty-nine miles of streets will be paved. Cost, about $4,130,500. Petitions being presented for $1,000,000 additional paving.

HELENA, ARK.—J. A. Tappan, Street Comr., writes us that bids are asked for constructing 12,000 sq. yds. of brick pavement. C. J. Parvis, Des. Engr.

HOUSTON, TEX.—Bids are asked until June 15 for constructing brick, asphalt or gravel paving on McKinney Ave. F. L. Dormant, Cy. Engr.

SEATTLE, WASH.—Frank & Brandon received contract for concrete walks on 15th Ave. at $4,653.——J. W. Fitts & Co. received contract for grading Mercer St., at $28,557.

LEWISTON, IDAHO.—F. Johnesse, Northwestern Bridge & Const. Co., received contract for constructing wagon road from Scotts Valley to Roosevelt, 72 miles, at $36,500.

BONDS.—Election will be held June 16 by San Antonio, Tex., to decide upon an issue of $500,000 for good roads.——According to City Engineer Dormant, Houston, Tex., a bond issue of $725,000 is required for paving and draining.——Bids are asked by Napoleon, O., until June 12 for purchasing $40,000 road improvement bonds. D. F. Coe, County Audr.——Dayton, O., will issue $70,000 paving bonds.——Bids are asked by Montgomery, Ala., until June 29 for purchasing $25,000 paving bonds. R. Williams, Cy. Treas.

MANUFACTURING PLANTS.

PROVIDENCE, R. I.—C. Lambert, of Dexter, Lambert & Co., has purchased property of the Allendale Co. at Allendale, and will equip the plant for silk manufacturing.

BUFFALO, N. Y.—B. I. Crooker has contract for erecting 8-story, 130 × 64 ft., fireproof building for Larkin Soap Co., at Seneca and Larkin Sts.

OSWEGO, N. Y.—Stated that National Railroad Signal Co., F. R. Shepherd, Mgr., will spend $100,000 on its plant in this city.

BURLINGTON, N. J.—Contract, 3-story brick, 300 × 40 ft. machine shop for Thos. Devlin Co., let to J. S. Rogers Co., Stanwick, N. J.

TRENTON, N. J.—New Jersey Wire Cloth Co. will erect two 4-story 300 × 75 ft., to be used in manufacture of wire cloth. The cost including equipment will be about $500,000.

VINELAND, N. J.—Holt & Shober, Engrs., Bourse Bldg., Philadelphia, Pa., are reported to be making plans for 2-story brick, ice and cold storage plant at this place.

IRVIN, PA.—Eleanor Iron & Steel Co. will install open hearth mill to cost $200,000.

PHILADELPHIA, PA.—E. Hartmann, Arch., 514 Walnut St., has asked bids for a brick and steel 5-story, 50 × 40 ft., fireproof brew house for Wm. Heinegartner. Philip H. Johnson, Arch., Fidelity Bldg., has asked bids for a 4-story, brick, slow burning, factory at 824 North American St.——K. W. Penckert, Arch., 234 South 4th St., has asked bids for a 4-story, 150 × 75 ft., brick and steel brew house for American Brewing Co.

PITTSBURG, PA.—The Union Forge Co., will erect plant on Second Ave. to manufacture rivets, bolts and forgings. Equipment has been purchased. Jesse B. Marshall, of McClintic-Marshall Construction Co., is Pres.

PITTSBURG, PA.—Stated that a $600,000 blast furnace is to be erected at Stone Point, near the mouth of the Beaver River. M. Marquis, New Castle, Pa., is said to be interested.

SHARPVILLE, PA.—Shenango Furnace Co., Pittsburg, Pa., will build two new blast furnaces here.

NORFOLK, VA.—The following bids were received June 6 for constructing shops and equipment storehouses at Navy Yard, Norfolk: (1) bid for building complete, (2) if repressed red brick is used, (3) system of fireproofing, (4) alternate bid: Grant Wilkins, Atlanta, Ga., (1) $71,000, (2) $73,200, (3) Roebling—System "B," (4) $67,760; Ryan & McFerran, 106 E. 23d St., New York, N. Y., (1) $67,563, (2) $70,563, (3) Vulcanite, Roebling or Rapp, time 7 months; John T. Wilson, 923 E. Main St., Richmond, Va., (1) $76,800, (2) $1,500, add., (3) fireproofing according to plans and specifications, (4) $5,680 deduct; Penn Bridge Co., Beaver Falls, Pa., (1) $66,867 (accepted), (3) fireproofing to conform to specification and approval of department.

WHEELING, W. VA.—Warwood Tool Co. will erect $30,000 plant.

EMPORIA, N. C.—Stated that cotton mill is to be built here. Dr. G. B. Wood said to be interested.

SPARTANSBURG, S. C.—Reports from here state that the manufacturing losses caused by the recent Pacolet River flood are as follows: Cotton mills 1, 2, and 3, Pacolet, totally destroyed, loss, $2,500,000, includes 3,600 bales of cotton and 4,000 bales of manufactured cloths. Mills 1, 2 and 3, Clifton, totally destroyed; loss, $2,000,000. Converse cotton mill, Converse, totally destroyed; loss, $1,000,000. Miscellaneous losses, including the cotton mill at Greer's and in Pickens county, $1,000,000.

CORDELE GA.—Billinger Construction Co. will build and equip pine product plant to cost $30,000. R. L. Wilson is Mayor.

MARIETTA, GA.—Glover Machine Works will build new plant here.

ANNISTON, ALA.—Weller Rolling Mill & Forge Co., W. H. Weller, Pres., will install spike mill in West Anniston.

GADSDEN ALA.—Mill of Kyle Lumber Co., damaged by fire; loss, $50,000.

JONESTOWN, TENN.—A spoke factory is to be erected here by parties interested in the cotton oil mill.

TROY, TENN.—Stated that city offers free building site and five years' exemption from taxes for new manufacturing enterprises.

PADUCAH, KY.—Kentucky Iron Co. will improve plant at cost of about $40,000. New store, boilers and machinery will be added.

NEWPORT, KY.—Stewart Iron Works will erect building at 17th and Madison Ave.

AKRON, O.—International Harvester Co., Chicago, Ill., may have its main factory in this place.

CANTON, O.—Dr. F. P. Calhoun is said to be at the head of company for reopening the Michler pottery plant and for building an addition to it.

CLEVELAND, O.—Peerless Motor Co., L. H. Kittredge, Gen. Mgr., will enlarge plant and erect model factory.

PAINESVILLE, O.—Foyer Pressed Steel Co., Albert Foyer, Pres., contemplates locating a plant here.

SPRINGFIELD, O.—American Seeding Co., E. L. Bookwalter Pres., will erect drill manufacturing plant in Ontario, Canada.

TOLEDO, O.—Foundry and machine shop may be constructed here. L. Schwab, of Toledo Safe & Lock Co., said to be interested.

CANTON, O.—Bookcase and office specialty plant of John Danner Co., recently damaged by fire to extent of $100,000, will be at once rebuilt.

EVANSVILLE, IND.—Neptune Launch & Manufacturing Co. will build boat factory.

PORT HURON, MICH.—Plant of Smith Boiler Works will be moved to Toledo, O., where a plant will be constructed.

RACINE, WIS.—The Racine Boat Manufacturing Co.'s factory damaged by a recent fire; loss, $115,000. The J. I. Case Threshing Machine Shops were also damaged; to extent of $150,000.

ST. CLOUD, MINN.—Reported that if water power rights at Sauk Rapids can be purchased by L. Lindauer, Kaukauna, Wis., and others, $100,000 will be spent in improving it and $400,000 additional in erecting paper and pulp mill.

LOUISIANA, MO.—Large cement plant may be established here by Geo. W. Rothman and other Chicago capitalists.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

AUSTIN, TEX.—Vahlcamp & Sons, St. Louis, Mo., will establish brewery here.

DALHART, TEX.—Reported that shops for Chicago, Rock Island & Mexico R. R. will be removed to Tucumcari, N. M.

SEATTLE, WASH.—Morris Brothers Bag Co. will erect 5-story brick factory. Building and machinery will cost $100,000.

SAN FRANCISCO, CAL.—Stated that the Inglis Development Co. will erect plant in Buttes and Sutton county for manufacturing brick and pottery.

FOLSOM, CAL.—Folsom Development Co. will put up $40,000 machine shop.

RENO, NEV.—Southern Pacific R. R. will establish railroad shops here.

ST. LAMBERT, QUE.—Sites have been secured here and plants will be erected at once by the following manufacturing companies: Record Stove Co., Justice Peters, Gen. Mgr., Moncton, N. B.; Canada Radiator Co., J. F. Travers, Dir., Port Hope; Singer Manufacturing Co., St. Lambert. In addition large malleable iron works will be erected.

VANCOUVER, B. C.—Canning factory to be established here by D. W. Elder and others.

SOMERSET, MAN.—Town is offering bonus of $2,000 for building a roller mill.

MISCELLANEOUS CONTRACTS.

SMELTER.—Basin, Mont.—Stated that Cataract Mining Co., M. H. Howitt, Mgr., will erect smelter.

REDUCTION PLANT.—Walkerville, Mont.—Alice Mining Co. will equip its mines with zinc reduction plant.

CREEK IMPROVEMENT.—Herkimer, N. Y.—Town has voted on raising $5,000 for improving West Canada Creek.

FERRY.—Portland, Ore.—City votes to issue $50,000 of bonds for new ferry at Albina and $15,000 for Sellwood ferry.

CONCENTRATOR.—Salt Lake City, Utah.—Stated that the Ontario Mining Co., O. A. Palmer, Engr., will erect concentrator.

TELEPHONE IMPROVEMENTS.—Atlantic City, N. J.—Atlantic Coast Telephone Co. said to be planning extensive improvements.

CUTTER.—Philadelphia, Pa.—Neafie & Levy Ship & Engine Building Co. will build a $35,000 steel cutter for quarantine service.

UNDERGROUND WIRES.—San Francisco, Cal.—$30,000 is provided in next year's fiscal budget for putting city wires underground.

ORE PLANT.—Estes City, N. M.—Sunflower Mining Co., David Sanders, Mgr., contemplate erection of plant for treatment of ore.

MINING MILL.—Hillsboro, N. M.—Las Animas Gold-Copper Co., W. W. Williams, Gen Mgr., will put in 50-ton mill at Wicks Mine.

LATRINE.—Boston, Mass.—Jarvis Engineering Co., 61 Oliver St., Boston, was low bidder at $2,885 for building brick latrine at navy yard.

VESSEL.—New York, N. Y.—Bids are asked until June 20 for construction and equipment of single screw steel vessel for submarine cable service.

SMELTER, PUMP, ETC.—Catalina, Ariz.—Catalina Copper Co., F. M. Hartman, Mgr., P. O. Oracle, will erect smelter and install pump, hoist and drills.

STAMPS, CONCENTRATORS.—Coulterville, Cal.—Reported that the Diana Gold Mining Co. will install additional stamps and a concentrator.

CYNANIDE PLANT.—Kendall, Mont.—Cynanide plant, to cost about $36,000, will be installed at the Abby mine, the owner of which is J. R. Cook.

CYNANIDE PLANT.—Prescott, Ariz.—Stated that Tiger Gold Co., Geo. Harrington, Mgr., will shortly put in cynanide plant at Grey Eagle Mine.

SEA WALLS.—Alameda, Cal.—Bids will be received June 15 for construction of sea walls across Oak and Laurel Sts. J. W. Gillogly, Cy. Clk.

GATEWAY.—Denver, Colo.—$5,000 is in hands of Denver Real Estate Exchange, John S. Flower, Pres., for building ornamental gateway to city park.

MOLE.—Richmond, Cal.—Southern Pacific R. R. will, it is said, build a mole at Point Richmond, from which three freight piers will be extended 1,000 ft.

FERRY TERMINAL.—New York, N. Y.—City is to begin condemnation proceedings for securing land for new ferry terminal at St. George, Staten Island.

CEMENT.—Boston, Mass.—Bids are asked by Massachusetts Highway Comn. until June 18 for 1,000 bbls. Portland Cement. W. E. McClintock, Comr.

CAR FERRY SLIP.—Grand Haven, Mich.—Contract for car ferry slip has been let to Burke, Smith & Nelson, Muskegon, Mich.; contract involves about $30,000.

RETAINING WALL.—Depew, N. Y.—Bids are asked until June 15 for constructing concrete retaining wall at sewage disposal plant. J. C. Glade, Village Clk.

MERRY-GO-ROUND.—Long Beach, Cal.—Long Beach Amusement Co. will put in $5,000 electric merry-go-round here and consider erecting $30,000 scenic railway.

FIRE-ALARM SYSTEM, ETC.—Redlands, Cal.—Complete electric fire-alarm system and additional fire apparatus are reasons for asking for a $20,000 bond election.

BROKEN STONE.—New York N. Y.—Bids are asked until June 18 for furnishing Park Board with 5,000 cu. yds. trap rock screenings. Wm. R. Willcox, Park Comr.

FIRE BOAT.—Portland, Ore.—Bids are asked by city until July 17 for building a fire boat. It is to be a twin-screw craft, with either a wood or steel hull; cost is not to exceed $30,000.

CORRUGATED IRON ROOFING.—Rutland, Vt.—David Fox, Jr., Gen. Mgr. Rutland Street Railway Co., will need about 30,000 sq. ft. of galvanized corrugated iron roofing and sheathing.

LIFE BOATS.—Washinghton, D. C.—Bids are asked until June 15 for construction 15 34-ft. self-righting and self-bailing life boats for U. S. Life Saving Service. S. I. Kimball, Gen. Supt.

WHARF.—Ottawa, Ont.—Contract for government wharf at Fox River let to Lyons & White for about $41,000. The contract for a wharf at Fort Lawrence was also let to the above firm for $15,000.

DRAINAGE WORK.—Tomah, Wis.—We are informed that no bids were received at recent opening of proposals for drainage work in the Lemonweir River Drainage District. W. S. Fryer, Secy.

DOCKS.—San Francisco, Cal.—The two new docks of the Pacific Mail Steamship Co. will be 800 ft. long and 120 ft. wide, and will cost $450,000. Two additional wharves are to be built later.

PILING.—Deweyville, Tex.—Bids are asked until June 15 for driving and capping about 35,000 lin. ft. of piling for approaches to Sabine River bridge. L. F. Daniell, Ch. Engr., Gulf, Sabine & Northern R. R.

CONCENTRATING MILL.—Frisco, Utah.—Newhouse Mines & Smelter Co. will erect 1,500-ton concentrating mill and smelting plant; also perhaps 200 brick cottages; water will be piped from Wah Wah Springs.

STEAM BOATS.—Seattle, Wash.—Pacific Coast Steamship Co. has been considering construction of two passenger steamers, to cost about $2,500,000. Company will build this year two other boats at cost of $300,000.

BOILER PLANT.—Indianapolis, Ind.—Bids are asked until June 25 for installing complete boiler plant at Central Indiana Hospital for Insane. Thos. G. Smith, Cincinnati, O., Engr.; R. L. Kennedy, Pres. Bd. Trus.

PRISMATIC SHUTTERS.—New York, N. Y.—It is stated that the directors of the Commercial Cable Building Co. are securing estimates for prismatic shutters, to be used for lighting offices on south side of Cable Building.

FERRY.—Venice, Ill.—Franchise to build an approach and run a ferry from Venice to Bremen Ave., St. Louis, has been granted to H. W. Hamilton. The Bremen Ave. Ferry Co. will be organized with $150,000 to carry out the terms of the franchise.

BREAKWATER.—New Haven, Conn.—Bids are asked until June 22 by Maj. Chas. F. Powell, for extending the breakwater at New Haven, as stated in our advertising columns. The work to be done consists entirely of furnishing and placing 45,000 tons (2,240 lbs.) of riprap, and must be completed within 6½ months after notification of award of contract.

MACHINE TOOLS, ETC.—Washington, D. C.—Bids are asked until June 16 for machine tools, beams, hand tools at several navy yards; also for building retaining wall at naval station, Newport, R. I., and for repairing buildings at naval hospital, Philadelphia, Pa. A. S. Kenny, Paymaster Gen., U. S. N.

LIGHT STATION PROTECTION.—Mobile, Ala.—The following bids were received May 30, as advertised in Engineering News, for protection of Ship Island and Pass Manchac light stations, (1) being bid for former and (2) for latter: B. & J. Tranchina, New Orleans, La., (2) $3,456; James & Eskald, Biloxi, (1) $1,752, (2) $2,660; J. T. Swetman, Biloxi, (1) $1,784, (2) $2,752.

BATTLESHIPS.—Washington, D. C.—Contracts for building the three new 16,000-ton battleships, the Minnesota, Kansas and Vermont, have been let as follows: Minnesota—Newport News Shipbuilding Co., Newport News, Va., $4,110,000. Kansas—New York Shipbuilding Co., Camden, N. J., $4,179,000. Vermont—Fore River Manufacturing Co., Weymouth, Mass., $4,165,000.

STEEL HULL AND CABIN.—Grand River, Mich.—The following bids were received June 5 for construction steel hull and cabin for suction dredge, as advertised in Engineering News. Lt. Col. M. B. Adams, U. S. Engrs.: Thomas Johnston, Ferrysburg, Mich., $21,000; Manitowoc Dry Dock Co., Manitowoc, Wis., $29,095; George Warrington, Chicago, Ill., $46,450; The American Shipbuilding Co., Cleveland, O., $48,500.

RETAINING WALL.—Rochester, N. Y.—Cost of retaining wall to prevent flooding of Exchange St. has been estimated as follows: 8,500 cu. yds. ballast., etc., at 40c., $3,400; 8,000 cu. yds. filling, at 30c., $2,400; 310 cu. yds. concrete retaining wall, at $4.50, $1,395; 3,000 cu. yds. riprap, at $3, $9,000; 84 lin. ft. cast-iron pipe, $400; engineer and superintendent, $600; contingencies, $860; total, $18,055. E. A. Fisher is Cy. Engr.

DREDGING.—New York, N. Y.—Bids are asked until July 10 for dredging in Bronx River, East Chester Creek, Huntington Harbor and Canarsie Bay. The contract calls for the following work: Bronx River, making a channel 4 ft. deep at mean low tide and 100 ft. wide from the mouth to Barlow St., thence 60 ft. wide to Dongan St., and 50 ft. wide to the head of navigation at West Farms; available, $5,000. Specifications for this piece of work on file at the office of Engineering News; East Chester Creek, 9 ft. channel, 3,000 ft. long; available, $2,500; Huntington Harbor, $2,000. Col. Amos Stickney, U. S. Engrs. (See advertising columns.)

NOTES ON BREAKWATER EXTENSION AT GRAND RAPIDS, MICH.—Bids will be opened June 24, 1903, by Lieut. Col. M. B. Adams, for breakwater work, as stated in our advertising columns. The contractor may, at his option, begin this work at any time before May 1, 1904, and must complete it before Nov. 1, 1904. The items of work are as follows: 1,296 ft. B. M. white oak; 117,043 ft. B. M. white or yellow pine or Douglas fir; 146,856 ft. B. M. hemlock or Norway pine; 26,373 lbs. drift bolts; 1,009 lbs. screw bolts; 3,600 lbs. spikes; 1,523 cords (128 cu. ft. each) of stone, and the removal of the North Breakwater and replacing the cribs on a stone foundation in extension of the West Breakwater. This North Breakwater consists of two cribs, each 100 ft. long, 26 ft. wide and 20½ ft. high, full of stone (671 cords), resting on a stone foundation, containing 990 cords of stone.

NOTES ON THE PIER CONSTRUCTION AT SAUGATUCK, MICH.—Bids will be opened June 17, by Lieut. Col. M. B. Adams for pier work, as stated in our advertising columns. The following are the items enumerated in the bidding sheet: 2,400 cu. yds. dredging for crib foundation; 128 foundation piles, 17 ft. long; 44,888 lin. ft. of white oak piles, nearly all under 30 ft. long; 56,276 ft. B. M. white oak timber; 492,424 ft. B. M. yellow pine or Douglas fir timber; 229,808 ft. B. M. hemlock or Norway pine timber; 497,648 ft. B. M. white pine, yellow pine or Douglas fir plank for sheet piles; 32,457 ft. B. M. white or yellow pine; 85,949 lbs. drift bolts; 35,182 lbs. screw bolts; 20,100 lbs. tie rods; 16,035 lbs. carriage bolts; 2,225 lbs. spikes; 2,180 cords (128 cu. ft.) of stone. The work may be begun this summer, or if the contractor prefers it need not be begun until April 15, 1904; but in any event it must be completed by Dec. 31, 1904. The work consists in constructing two parallel piers, 200 ft. apart in the clear, extending 1,302 ft. into Lake Michigan, the outer end of each pier consisting of a crib 24 ft. wide, 100 ft. long, 16½ ft. high, resting upon a pile foundation. The remainder of each pier will be a sheet-piled structure, 14 ft. wide, with a superstructure 4 to 5 ft. high, partly filled with stone.

U. S. POSSESSIONS AND CUBA.

RAILWAY.—Havana, Cuba.—The stockholders of the Havana Electric Ry. Co. met on June 4 and authorized the issuance of $250,000 in bonds for construction, equipment and improvement purposes. A. Marcus is Secy., 52 Broadway, New York.

WRECK REMOVAL.—Cuba.—But one bid was received by the Treasury Department at Havana for the removal of the wreck of the U. S. Battleship "Maine," it being submitted by Tibucio Castaueda. No bids were submitted for raising the "Alfonso XII." or the ships sunk in the harbors of Santiago and Manzanillo. New bids will probably be called for on the entire work.

RAILWAY.—Alaska.—Geo. W. Dickinson, Pres. Alaska Central Ry., Seattle, Wash., states that the construction of the first 25 miles of the new line will be started about July 10, and will be completed this summer, the work being done by the Northwest Construction Co., which has evidently been formed for that purpose. Materials for that length of line have been purchased. The road will start at Resurrection Bay and few engineering difficulties will be met with.

MEXICO.

TANK.—The Cananea Mining Co. of La Cananea, Sonora, will erect a steel tank 40 ft. square and 60 ft. high.

SMELTER.—La Baranca.—Smelter to be erected here with a capacity of 150 tons daily. Frank Hartman, of Tuscon, Ariz., is interested.

REDUCTION WORKS.—El Oro.—It is reported that El Oro Mining & Railway Co. will build additional reduction works and a 100-stamp mill here; est. cost, $350,000.

STAMP MILL.—Magdalena, Sonora.—Negales Copper Co. reported to have purchased the Cerro Prieto mine, about 40 miles from here, and will erect a 100-stamp mill on the property.

WATER WORKS.—Tejamen.—Water works system to be established here under the auspices of the state government. Dam to form reservoir being built. "El Gubernador," Durango, can give information.

TELEPHONE.—City of Mexico.—Pablo Martinez del Rio, representing the Mexican Telephone Co., has applied to the council for an extension of time in which to put into effect its telephone service in this city.

BUILDING.—Guadalupe.—A home for the poor, costing $100,000, is to be erected here under the provisions of the will of the late Bartelo Sanvano. "El Gubernador," Guanajuate, can probably give information.

WHARF.—Guaymas, Mexico.—A company has been organized to construct a wharf at this port and has applied to the government for a concession. J. A. Naugle, of Guaymas, may be able to give information.

RAILWAY.—The Terrenates Mining Co., Parral, Chihuahua, is completing arrangements for constructing a railway from Minas Nuevas to its properties; $70,000 worth of construction material has already been ordered.

RAILWAY.—Parral.—Reported that the Mexican Mining & Exploration Co. will construct tram or railroad to connect its mines, 60 miles northwest of here, with the Mex. Central R. R. James V. Dignewity, of San Antonio, Tex., is Gen. Mgr.

POWER DEVELOPMENT.—Congress has approved the contract between the secretary of fomento and Charles H. Cahan, representing the Mexican Light & Power Co., Ltd., for the exploitation of the waters of the rivers Tenango, Necaxa and Catepuxtla, in the State of Puebla, for motive power.

IRON FURNACE.—The Compania de Altos Hornos Mexicanos, in Tepeyahuiaco, State of Puebla, will shortly build a furnace of a capacity of 200 tons of iron and steel daily, doubling the present capacity. The Bessemer process will be used. Senor Angel Zavalza is Pres. and Emilio Segura Gen. Mgr.

BRIDGE.—Congress has voted appropriation of $94,770 for a street bridge and viaduct to connect the city of Tampico with the custom house, warehouses and wharf at the port. The Mexican Central Ry. will include this work in its contract for the Tampico harbor works and accessories. Lewis Kingman is Chief Engr., Mexico City.

BUILDING.—City of Mexico.—Plans completed for office building for the Mutual Life Ins. Co., of New York, to cost about $450,000 (gold); building to be five stories in height and cover about 11,000 sq. ft.; will be equipped with electric lighting, elevators, etc.; about 1,000 tons of structural steel to be required. De Lemos & Cordes, Archs., 130 Fulton St., New York. Plans are now being sent out by the architect for bids, and the contracts will be let separately or in one.

RAILWAYS.—Magdalena.—Negales Copper Co., composed of Chicago men, will build a railroad from this place to its mines, about 40 miles from here.——Guillermo Purcell, Saltillo, granted a government concession for a railroad to run from a point on the Coahuila & Zacetecas R. R. to the mining town of San Pedro Ocampo, in the state of Zacatecas. Principal office at Saltillo.——Orman & Crook, of Denver, Colo., have the contract for grading the extension of the Nacozari Railroad from Cos to Nacozari.

FOREIGN CONTRACTS—EXPORT NEWS.

MINING MACHINERY.—Spain.—An Exhibition of Minerals will be held at Hugo, and American manufacturers of mining machinery may obtain an opening in this country by sending catalogues in Spanish weights and measures.

ELECTRIC TRAMWAY.—Derby, Eng.—F. W. Mahin, U. S. Consul, reports that the city of Derby has decided to substitute electricity for horse power on its tramway system, about six miles long. The overhead system will be used, and about $400,000 will be expended on the work.

PIER.—Smyrna.—Arrangements are being made by the Ottoman Ry. Co., of Smyrna, to extend a stone pier some 200 yds. into Smyrna Bay. From $800,000 to $1,000,000 will be expended; two years will be required for its completion. R. W. Lane, U. S. Consul, says that this may interest American contractors.

POWER EQUIPMENT.—London, Eng.—The Metropolitan Electric Supply Co., of London, will extend its plant at a cost of some $450,000, and E. Manville, of the engineering firm of Kinaird, Waller, Manville & Dawson, of London, is acting as consulting engineer. The existing plant is made up largely of machinery of American manufacture.

POWER EQUIPMENT.—Japan.—Contracts are said to have been awarded by the Kobe Electric Light Co. for the equipment for its plant at Kobe, Japan, as follows: generator, General Electric Co., New York; engine, McIntosh & Seymour, Auburn, N. Y.; boilers, Babcock & Wilcox; condensing equipment, Blake branch of the International Steam Pump Co., 141 Liberty St., New York.

RAILWAY.—Chili.—Bids are reported wanted by the Chilian government at Santiago de Chili until Dec. 15, 1903, for constructing the Transandine R. R. The construction of this road was recently authorized by the Chilian Congress, and note of that fact was made in our issue of May 14. The road is an old project and contemplates a connecting line from Buenos Ayres, Argentine, to Santiago and Valparaiso. Part of the line is now being built by the Argentine government. R. E. Mansfield, U. S. Consul, recently reported that the Chilian government would guarantee for a term of 20 years 5% interest on a sum not to exceed $7,250,750 for the construction of the road; also that the road was to be built by a concessionaire who would be obliged to sell to the State the completed road if the State so willed, for a sum not exceeding the sum invested and 10% interest.

Information concerning contracts to be let or of supplies to be furnished, and corrections of errors and omissions in published items, are invited.

BRICK AND PIPE SEWER CONSTRUCTION.

Shreveport, La., May 22, 1903.

(1) Sealed proposals will be received at the office of the City Comptroller until 6 p.m. June 26th, 1903, for constructing the following sewers:

778 lin. ft. 18-in. vitrified pipe sewer;
1,029 " " 24-in. " " "
306 " " 30-in. circular brick or concrete sewer;
362 " " 42-in. circular brick or concrete sewer;
373 " " 54-in. circular brick or concrete sewer;
40 " " 72-in. circular brick or concrete sewer;

With manholes, catchbasins, complete.

(2) Plans and specifications may be seen and blank proposals obtained at the office of the City Engineer after May 26th.

(3) Each proposal must contain full name of party or parties making same and must be accompanied by certified check equal to 10% of the estimated amount of contract, payable to the City Comptroller as surety that, if the proposal be accepted, a contract will be entered into.

(4) No proposal will be entertained unless made on blanks furnished by the City Engineer.

(5) A bond equal to full amount of the contract as let will be required of contractors to secure faithful performance of contract.

(6) The city reserves the right to reject any and all bids. C. G. RIVES,
22-4t Comptroller.

18-FT. STONE SEWER.

CITY ENGINEER'S OFFICE,
BURLINGTON, IOWA, MAY 20, 1903.

Sealed proposals will be received at the office of the City Clerk until 4 o'clock P. M., Monday, June 15, 1903, and opened at the first regular or adjourned council meeting therafter, for the construction of the Main Hawkeye Sewer from Jefferson to Washington Street—300 ft. of stone sewer, 18-ft. diam., in accordance with plans and specifications on file in the City Engineer's Office.

Each proposal must be accompanied in a separate envelope, by a certified check in the sum of $1,000.00, made payable to the order of the City Treasurer.

A bond in the sum of $2,500.00, with two or more resident sureties, or with a surety company, as surety, will be required for the faithful performance of the contract. Sureties must be satisfactory to the city council. In case a contract is awarded the work shall be commenced on or about July 1, 1903, and completed on or before July 1, 1904.

The city council reserves the right to reject any and all bids or to accept the proposal deemed by them to be for the best interests of the city. EMMET STEECE,
23-1t City Engineer.

LAYING SUBMERGED CAST-IRON INTAKE WATER PIPE.

Office of the
Commissioners of Water-Works
in the City of Erie
Erie, Pa., May 20, 1903.

Sealed proposals, addressed to the Commissioners of Water-Works in the City of Erie, and endorsed "Proposals for Laying Submerged Cast-Iron Intake Water Pipe," will be received at the office of the Commissioners until 3 o'clock p. m. June 27, 1903, and then publicly opened.

The work will consist in furnishing all material (except the cast-iron pipe and special castings and lead, which will be furnished by the Commissioners f. o. b. cars Erie, Pa.) and doing all dredging and other work necessary to lay a submerged cast-iron intake water pipe five (5) feet in diameter and about 2,800 ft. in length in Erie Harbor and Presque Isle, near the south shore of Presque Isle.

Each proposal must be made on a printed form, which, together with form of contract and specifications will be furnished upon application.

Each proposal must be accompanied by a certificate of deposit of some bank in the City of Erie, Pa., for the sum of One Thousand ($1,000) Dollars, made payable to the Commissioners.

The Commissioners reserve the right to reject any or all proposals.

CLARK OLDS,
G. F. BREVILLIER,
WILLIS B. DURLIN,
Commissioners of Water-Works in the City of Erie.

GEO. C. GENSHEIMER, Sec'y & Treas.
GEO. H. FENKELL, Civil Engineer to Commissioners. 23-2t

U. S. ENGINEER OFFICE, Army Building, New York, June 10, 1903.—Sealed proposals for Dredging in Bronx River, East Chester Creek, Huntington Harbor, Flushing Bay and Canarsie Bay, N. Y., wil be received here until 12 m. July 10, 1903, and then publicly opened. Information on application. AMOS STICKNEY, Col., Engrs. 24-4t

GRAVITY WATER-WORKS.

Coopersburg, Pa.

Sealed proposals will be received at Coopersburg, Pa., up to 5 o'clock p.m. on the 15th day of June, 1903, for furnishing the materials and doing the work necessary to construct a Gravity System of Water-Works for the Town of Coopersburg. It embraces approximately:

10,700 ft. 8-in. pipe.
4,500 " 6-in. "
3,000 " 4-in. "
25 double nozzle fire hydrants.
25 8x6x4-in. valves and boxes,
300,000-gallon reservoir.

Each proposal must be accompanied by a certified check for five hundred ($500) dollars, made payable to Marcus Clewell, President of Council, such check to be forfeited by the successful bidder in case he refuses to sign the contract for the work bid upon within 10 days of the time the same is awarded to him.

Plans may be seen and specifications and forms of proposals obtained at the office of the Engineer in Sellersville, Pa., or at the office of the Borough Clerk in Coopersburg, Pa. The Borough Council reserves the right to reject any or all bids for the work.

WARREN F. CRESSMAN,
M. L. ENGELMAN, Engineer.
Borough Clerk. 23-2t

BELL AND SPIGOT WATER PIPE, ETC.

South Deerfield, Mass., May 15, 1903.

Sealed proposals will be received by the Water Commissioners until 6 o'clock p. m., June 15, 1903, for about 500 tons Cast-Iron Bell and Spigot Water Pipes and Special Castings, 10-in. pipe to weigh 63 lbs. per ft.; 8-in. pipe to weigh 47 lbs. per ft. Also for hydrants, valves and valve boxes. 100 tons of pipe to be shipped before July 15, and 100 tons to follow every fifteen days. All delivered via B. & M. R.R. South Deerfield, Mass. The right is reserved to reject any or all bids or to accept such bid or bids as may be to the best interest of the District.

J. B. BRIDGES,
P. W. NEWELL,
C. F. BILLINGS,
23-2t Water Commissioners.

STEEL OR WOODEN BRIDGES.

Parish of Caddo, Shreveport, La.
BIDS ARE INVITED

For building either Wooden or Steel Bridges at the following places: Bridge over Dooley Bayou, about 160 ft. long, at Section Six plantation, in Ward 1, of Caddo Parish; also for Steel or Wooden Bridge, with earthwork approaches at Hale's Ferry, between Wards 1 and 2, bridge 150 ft. long and earthwork about 400 yds.; also bridge over Red Bayou in Ward 1, at Gilliam, about 200 ft. long, either pile driven or steel. Bids to be opened at meeting of jury, June 18, 1903. The jury reserving the right to reject any and all bids.

P. P. KEITH, President.
A. L. DURINGER, Clerk. 22-3t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 2, 1903.—Sealed proposals will be received at this office until 3 o'clock p.m., on the 24th day of June, 1903, and then opened, for the construction of a gallery and cases for plates and dies in the new plate vault at the Bureau of Engraving and Printing, Washington, D. C., in accordance with the drawing and specification, copies of which may be had at this office at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 23-2t

U. S. ENGINEER OFFICE, Grand Rapids, Mich., May 25, 1903.—Sealed proposals for Extension of West Breakwater at Petoskey, Mich., will be received here until 3 p.m., June 24, 1903, and then publicly opened. Information furnished on application. M. H. ADAMS, Lieut.-Col., Engrs. 22-4t

SEALED PROPOSALS, in duplicate, endorsed "Proposals for Coaling Plant Extension, Narragansett Bay Coal Depot, Bradford, R. I.," will be received at the Bureau of Equipment, Navy Department, Washington, D. C., until 1 o'clock p. m. on Wednesday, July 15, 1903, and then and there publicly opened. Proposals will be accompanied with plans and detail specifications, in duplicate, of the plant proposed to be furnished. General specifications and plans of the present plant and the proposed extension can be obtained at the Bureau of Equipment, also blank forms of proposals. Bidders are expected to visit the depot and make any examination deemed necessary for the preparation of plans and specifications. Data in regard to the location can be obtained on application. Bids for complete plant only will be considered. R. B. BRADFORD, Chief of Bureau of Equipment. May 27, 1903. 23-2t

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 6, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 6th day of July, 1903, and then opened, for the construction (except heating apparatus and electric wiring and conduits) of the U. S. Post Office at Norwich, Conn., in accordance with the drawings and specifications, copies of which may be had at this office, or the office of the Postmaster at Norwich, Conn., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Arch. 24-2t

CAST-IRON WATER PIPE.

Office of the
Commissioners of Water-Works
in the City of Erie.
Erie, Pa., May 20, 1903.

Sealed proposals, addressed to the Commissioners of Water-Works in the City of Erie, and endorsed "Proposals for Cast-Iron Water Pipe," will be received at the office of the Commissioners until 3 o'clock p.m., June 27, 1903, and then publicly opened.

The work will consist of the manufacture and delivery f. o. b. cars Erie, Pa., of about 1,202 tons of Cast-Iron Water Pipe five (5) feet inside diameter, and about 6¾ tons of Special Castings for water pipe.

Each proposal must be made on a printed form, which, together with form of contract and specifications will be furnished upon application.

Each proposal must be accompanied by a certificate of deposit of some bank in the City of Erie, Pa., for the sum of One Thousand ($1,000) Dollars, made payable to the Commissioners.

The Commissioners reserve the right to reject any or all proposals.

CLARK OLDS,
G. F. BREVILLIER,
WILLIS B. DURLIN,
Commissioners of Water-Works in the City of Erie.

GEO. C. GENSHEIMER, Sec'y & Treas.
GEO. H. FENKELL, Civil Engineer to Commissioners. 23-2t

PROPOSALS FOR FURNISHING CAST-IRON WATER PIPE.—Office of the Commissioners, D.C., Washington, June 3, 1903.—Sealed proposals will be received at this office until 12 o'clock noon, June 13, 1903, for furnishing twenty (20) inch Cast-Iron Water Pipe. Specifications and blank forms of proposal may be obtained at this office. HENRY B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners, D. C. 24-1t

DEPARTMENT OF THE INTERIOR, Washington, D. C., May 30, 1903.—Sealed proposals will be received at this Department until 2 o'clock p. m., July 15, 1903, for the construction of about 15 miles of Canals, with diverting dam, headworks, spillways and tunnels, for the diversion and conveyance of 1,400 cu. ft. of water per second from the Truckee River, between Clark Station and Wadsworth, Nevada., to irrigable lands in the Truckee and Carson Valleys. Plans and specifications will be open for insnection, and blank forms upon which all bids must be made can be procured at the office of the Geological Survey, Washington, D. C., and Reno, Nevada, on and after June 20, 1903. Each bid must be accompanied by a certified check for 2% of the amount of the bid, as a guaranty that the bidder will enter into a written contract with the Secretary of the Interior within ten days after the award is made, and furnish bond in the sum of 50% of the contract price, for the faithful performance of the work. The Secretary of the Interior reserves the right to reject any and all bids. Detailed information can be obtained on the ground from L. H. Taylor, Resident Engineer, Reno, Nevada. Proposals should be addressed to the Secretary of the Interior, Washington, D. C., and endorsed on envelope "Proposals for Irrigation Work, Truckee River, Nevada." E. A. HITCHCOCK, Secretary. 24-4t

OFFICE OF THE COMMISSIONERS, D. C., Washington, D. C., June 6, 1903.—Sealed proposals will be received at this office until 12 o'clock noon, June 20, 1903, for furnishing eight (8) and twelve (12) inch Cast-Iron Water Pipe. Specifications and blank forms of proposal may be obtained at this office. HENRY B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners, D. C. 24-1t

OFFICE, CONSTRUCTING QUARTERMASTER, Cheyenne, Wyo., June 9, 1903.—Sealed proposals, in triplicate, will be received at this office until 2 o'clock p. m., mountain time, July 9, 1903, and then opened, for constructing about 11,000 ft. of 12-in. Irrigating Conduit from Cheyenne City's gate house on Crow Creek, to the head of the irrigating system at Fort D. A. Russell, Wyo. Bidders must state in their bids the time in which they will complete the work. Proposals must be accompanied by two guarantees justifying, jointly, in double the amount of 10% of the bid. Full information, blank forms, plans and specifications furnished on application to this office; also to the office of the Chief Quartermaster, Chicago, Denver, Omaha and St. Paul. United States reserves the right to accept or reject any or all bids, or any part thereof. Envelopes containing bids to be endorsed "Proposals for Irrigating Conduit for Fort D. A. Russell, Wyo.," and addressed to Capt. W. S. SCOTT, Constructing Quartermaster, Cheyenne, Wyo. 24-4t

U. S. ENGINEER OFFICE, Randolph Bldg., Memphis, Tenn., June 1, 1903.—Sealed proposals for construction of twelve material Barges for use in Third District, Improving Mississippi River, will be received here until 12 o'clock noon, July 1, 1903, and then publicly opened. Information furnished on application. CHAS. L. POTTER, Capt., Engrs. 23-2t

NOTE the new advertisements pages XXVI to XXIX.
YOU MAY BE INTERESTED IN SOME OF THEM

Proposal Advertisements

EXPERIENCE—LOWER PRICES

"Money saving" advertisements calling for bids in Engineering News for June 4.

Take notice that the entire contracting field is covered.

	Issues	No. of Advt.
Bonds, Public Improvement	1	1
Bridges and Masonry Work	13	5
Buildings, Jails	19	6
Harbor and River Work	19	10
Electric Light and Power	4	1
Paving, Road Work	91	18
Sewerage	25	7
Water Works, Wells, Pumps and Supplies	18	8
Garbage Disposal, St. Cleaning	2	1

Besides the above, bids have recently been asked through Engineering News, for Tunnels, Manufacturing Plants, Steam Shovel Work, Conduits, Dams, Drainage, Locks, Railway Work, Chimneys, Cement, Sand, Pipe, etc.

Advertise all Municipal, County and Large Private Work in Engineering News

OFFICE CONSTRUCTING Q. M., Burlington, Vt., May 25, 1903.—Sealed proposals, in triplicate, will be received until 12 m. June 25, 1903, for constructing, heating, plumbing, gas piping and electric wiring of two sets Field Officers' Quarters, two double sets Captains' Quarters, three double sets Lieutenants' Quarters, and two double Cavalry Barracks, constructing and plumbing for four Cavalry Stables and construction of two Field Artillery Shop buildings, two double Cavalry Stable Guard Houses, one Quartermaster's Storehouse and one Magazine at Fort Ethan Allen, Vt. Information furnished on application. U. S. reserves right to reject or accept any or all proposals or any part thereof. Envelopes containing proposals to be endorsed "Proposals for Public Buildings, Fort Ethan Allen, Vt." Capt. T. B. LAMOREUX, Q.M. 22-4t

OFFICE OF THE CONSTRUCTING QUARTERMASTER, 621 Dooly Bldg., Salt Lake City, Utah, May 26, 1903.—Sealed proposals, in triplicate, will be received here until 11 a.m., Standard time, June 15, 1903, and then opened, for the construction of a Post Exchange and Gymnasium Building, including plumbing, gas piping, heating and electric wiring, at Fort Douglas, Utah. Bidders will state in their bids the time in which they will complete the work. Full information and blank forms of proposals furnished on application to this office. Plans and specifications may be seen here. United States reserves the right to accept or reject any or all proposals, or any part thereof. Envelopes containing proposals to be endorsed "Proposals for Public Buildings," and addressed to Capt. SAMUEL V. HAM, Quartermaster. 22-3t

ADVERTISE CONTRACT WORK IN ENGINEERING NEWS

Because it is the Leading Contractors' Paper in the World.

We carry from **25 to 100 inches more** of paid Proposal Advertisements each week than any other engineering paper, or about **300 inches more in three months.**

We carry **more U. S. Government** advertisements than any other engineering paper.

More contractors and civil engineers read our paper than any two other engineering papers in the world.

City officials advertising work with us write us constantly that "Engineering News" **brings better results** than any other paper they have advertised in.

Cities and Counties in nearly every State have advertised **all important work** with us, and most of the States considerable of their construction work. Numbers of foreign Cities and States have advertised for bids in our paper, and more are doing so every year.

Our Construction News Supplement contains 1,000 **advance and reliable news items** of proposed work every week. **Contractors everywhere** follow our news reports.

Advertise your contract work in "Engineering News," and receive lowest bids, thereby **saving your community or employers hundreds or thousands of dollars.**

File plans and specifications in our New York or Chicago offices free of cost.

Proposal Advertisements
$2.40 an inch

"For Sale" and "Want" Cards
$1.50 an inch

ENGINEERING NEWS
220 Broadway, New York

1,185-FOOT STONE BRIDGE.

Hartford, Conn.

Bids for building a Stone Bridge across the Connecticut River, at Hartford, Conn., will be received by the Board of Commissioners, at their office, Room 52 Aetna Life Building, 650 Main St., Hartford, Conn., until noon, on July 1, 1903, which bid must be signed by the bidders with their full names and addresses, and be enclosed in a sealed envelope, endorsed: "Bid for Building Stone Bridge." All bids must be deposited with the Chief Engineer on or before the hour of closing.

The bridge is to be about 1,185 ft. long, 80 ft. wide, and includes eight stone arches and a 100-ft. draw span with foundations, piers and abutments, in all containing about 23,000 cu. yds. of pneumatic foundation work and about 63,000 cu. yds. of all classes of masonry above foundations. The steel superstructure of the draw is not to be included in this proposal.

Bidders must submit to the Engineer of the Commissioners one week before closing of bids a sample of the granite on which their proposal is based, together with all information in regard to the stone required by the specifications for granite.

Bidders must also submit the name, location and ownership of the quarry, and the name and location of any important structures where the stone like the sample submitted has been used. The character and reputation of said stone will be an important consideration in awarding the contract, and preference will be given to the product of well-known quarries actually in operation on a scale commensurate with this work.

A certified check for ten thousand ($10,000) dollars, satisfactory to, and payable to, the "Treasurer of the Connecticut River Bridge and Highway District," must be deposited by each bidder with the said Treasurer before the hour for closing bids. Treasurer's receipts will be given for these checks, which receipts must be shown to the Chief Engineer of said Commissioners at the time bidder presents his bid; otherwise, such bid will not be received. These certified checks will be returned to the unsuccessful bidders within ten days after date of tender.

A bond will be required for the faithful performance of the work in the sum of one-fourth the estimated contract price. This bond must be guaranteed by a surety company doing business in the State of Connecticut, and satisfactory to the President of the Commission. Each bidder must furnish with his proposal a statement from the surety company, stating that it will sign his bond in case the contract be awarded him.

The contract must be signed and bond furnished within ten days (Sundays excepted) after the date of the notification by the Board of Commissioners of the acceptance of the proposal and the readiness of the contract for signature, and, in case of the failure of the bidder, after such notification, to execute the contract and furnish the bond within said time, the proposal will be considered as abandoned, and the certified check accompanying the proposal shall be forfeited to the Board of Commissioners.

Bids will be received only upon the plans on file in the office of the Engineer of said Board of Commissioners, where they can be examined by the bidders, and where all reasonable information will be furnished after June 10, 1903.

Bids will be considered only from parties experienced in the class of work called for by these plans and specifications. Parties desiring to bid must submit in writing to said Engineer such information in regard to past work and experience and present business standing and ability, together with references, as he may require. No bid will be received from a contractor who is not in control of a plant commensurate with the scope of this work.

All bids must be made upon the blank form hereto annexed, and must include all the papers comprising the complete contract and specifications. Bids which do not conform to this notice will be rejected.

Said Board of Commissioners reserve the right to reject any or all bids, and retain the right to accept any bids which, in their judgment is for the best interest of the District.

THE CONNECTICUT RIVER BRIDGE
& HIGHWAY DISTRICT COMMISSION
By MORGAN G. BULKELEY,
President.
EDWIN DWIGHT GRAVES, Chief Engr. 24-1t

WATER AND LIGHT FRANCHISE.

Horseheads, N. Y.

The Board of Trustees of the Village of Horseheads, N. Y., are ready to receive bids for supplying the Village with water and light, and if satisfactory arrangements can be made a franchise will be granted. Address all communications to 24-1t

R. G. EISENHART, President.

47,167 YDS. BRICK PAVEMENT.

Bryan, O., June 8, 1903.

Sealed proposals will be received at the office of the Village Clerk, of Bryan, O., until 12 o'clock noon, Thursday, July 2, 1903, for the furnishing of all materials and labor necessary for the construction of approximately 47,167 sq. yds. of Brick Pavement, together with the necessary curbing and drainage, on Main St., L. S. & M. S. R. R. to Wilson St.: High St., alley west of Beech St. to east line of lot 33; Butler St., Main St. to Lynn St.; Lynn St., Edgerton St. to a point 8 rods north of Pierce St.; and Cherry St., High St. to north line of lot 10, in accordance with the plans and specifications therefor on file in the office of said Clerk.

Each bid must be accompanied by a certified check for $1,000, as a guarantee that, if the bid is accepted, a contract will be entered into, and the performance of it properly secured.

Forms for proposals, plans, specifications, etc., on file at the office of the Village Clerk and at Riggs & Sherman, Toledo, O.

The right is reserved to reject any or all bids.

By order of the Common Council. 24-1t
J. W. HOKE, Village Clerk.

9,000 FT. OF SANITARY SEWERS.

Paris, Ill., June 6, 1903.

Sealed proposals for constructing 860 ft. of 10-in. and 8,120 ft. of 8-in. Sewer will be received by Z. T. Baum, President of the Board of Local Improvements of the City of Paris Ill., at the City Engineer's Office up to 7:30 p.m., June 20, 1903.

Certified check of 10% must accompany bid. Contractor will be paid in cash. Proposals and specifications may be had from the City Engineer.

D. H. SAWYER,
24-1t City Engineer.

PUMPING ENGINE AND WATER-TUBE BOILERS.

Reading, Pa.

Sealed proposals will be received at the office of the Board of Water Commissioners, No. 25 North 11th St., Reading, Pa., until 7:30 o'clock p. m., Tuesday, July 7, 1903, separately, for furnishing and erecting one (1) 15,000,000-gallon Vertical, Triple Expansion, Condensing, Crank and Flywheel Pumping Engine and for furnishing and erecting four (4) Horizontal Water-Tube Boilers of 175 HP. each.

Blank forms of "Proposals," "Instructions to Bidders," and "Specifications" can be had at the above office.

The right is reserved to reject any or all proposals.

GEORGE H. FELIX, President.
M. HARBSTER,
F. P. HELLER,
EDWARD ELBERT,
Board of Water Commissioners.
LINCOLN S. RAMSEY, Secretary,
CHAS. A. HAGUE, Consulting Engineer.
EMIL L. NUEBLING, Supt. and Engr., Water Department. 24-3t

BRICK OR BITULITHIC PAVEMENT.

Charlevoix, Mich.

Sealed proposals for furnishing materials and laying about 2,600 ft. of Combined Curb and Gutter, and 6,500 sq. yds. of Brick or Bitulithic Pavement, will be received by the Village Council until 12 o'clock noon, June 18, 1903.

Information concerning plans, specifications, and the conditions under which bids are to be submitted, can be obtained of the Village Clerk, Charlevoix, or of Geo. S. Pierson, Kalamazoo, Mich., Engineer.

The Council reserves the right to reject any bid or all bids.

W. H. McCARTNEY,
24-1t Village Clerk.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., June 3, 1903.—Sealed proposals will be received at this office until 3 o'clock p. m. on the 8th day of July, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric conduits and wiring) of the extension of the U. S. Court House, Post Office, etc., at Waco, Tex., in accordance with the drawings and specification, copies of which may be had at this office, or at the office of the Custodian, at Waco, Tex., at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect. 24-2t

OFFICE OF THE COMMISSIONERS, D. C., Washington, June 4th, 1903.—Sealed proposals will be received at this office until 12 o'clock noon, Saturday, June 20th, 1903, for Grading and Regulating Suburban Streets and Avenues. Blank forms of proposal, specifications and all other necessary information will be furnished at the office of the Engineer Commissioner, D. C. H. B. F. MACFARLAND, HENRY L. WEST, JOHN BIDDLE, Commissioners, D.C. 24-2t

ECONOMICS OF ROAD CONSTRUCTION

By H. P. GILLETTE

Cloth, 6x9 ins. **Price, $1.00**

A BOOK ON

COSTS

Giving Costs of Quarrying, Crushing, Hauling, Spreading and Rolling of Macadam, Based upon Actual Cost of Contract Work.

The Engineering News Publishing Company, 220 Broadway, New York.

STONE AND GRAVEL ROAD.

Monmouth County, N. J.

Sealed proposals will be received by a committee of the board of chosen freeholders of the County of Monmouth, at the court house in Freehold, N. J., on Monday, June 15, 1903, until 10 o'clock a. m., and then publicly opened, for the construction of a stone and gravel road, under the state aid act, four and one-half miles in length, on Corlies Avenue, from West Grove to Hamilton, in the Township of Neptune, in said County. Each bidder must accompany his bid with a certified check for one thousand dollars ($1,000), made payable to the director of the board of chosen freeholders of said County, as a guarantee that if said contract is awarded to him, he will, when required by the board, execute an agreement in writing to faithfully perform the work according to the plans and specifications. All proposals must be made on the blank form furnished for that purpose. Plans can be seen at the office of the Engineer, W. H. DeNyse, 164 Broadway (Post Office Building), Long Branch, N. J. Specifications and blank forms of proposals can be obtained from the County Collector, Freehold, N. J., or of the engineer.

The right to reject any or all bids is reserved.

JOHN GUIRE,
Director Board of Chosen Freeholders, Long Branch, N. J. 22-3t

BRICK, BLOCK, ASPHALT AND MACADAM PAVING.

Rensselaer, N.Y., May 22, 1903.

Sealed proposals will be received by the Common Council at the office of the City Clerk until 8 o'clock p.m., June 16, 1903, for the Grading and Paving with Brick, Granite Blocks, Asphalt and Bituminous Macadam Waterproof Pavement and furnishing and setting Granite Curb, building new Catch-basins and repairing old ones, and all other work which may be necessary to complete the proposed improvements on Second Ave., Columbia St., Broadway, Third St., Fowler Ave., and Fourth St., according to plans and specifications on file in the City Clerk's Office or in the office of C. A. Roemer, Engineer, 508-509 Cannon Place, Troy, N. Y.

The approximate amount of paving is 34,-509 sq. yds.

The approximate amount of curbing is 19,-307 lin. ft. 22-3t

C. A. ROEMER, City Engineer.
A. J. HOOGKAMP, City Clerk.

CREMATORY FOR THE INCINERATION OF GARBAGE.

City of Shreveport, La., May 19, 1903.

Sealed proposals are hereby invited for the erection of a Crematory for the incineration of garbage in the City of Shreveport. Plans, specifications and daily capacity, together with a certified check in the sum of five hundred dollars, as evidence of good faith and guarantee to sign contract, to accompany each proposal. The plant to cost not exceeding $10,-000. The contractor to accept payment in three annual instalments to be provided for in budget of expenses for the years 1904, 1905 and 1906, with 5% interest added. The City will provide location, and reserves the right to reject any or all bids and return checks.

Bids to be in hands of Comptroller by Monday, June 15, 1903, at 6 p. m. 22-3t

C. G. RIVES, Comptroller.

U. S. ENGINEER OFFICE, 1637 Indiana Ave., Chicago, Ill., May 27, 1903.—Sealed proposals for manufacture and erection of four riveted Steel Highway Bridges will be received here until noon, June 27, 1903, and then publicly opened. Information on application here, or to Assistant Engineer, L. L. WHEELER, Sterling, Ill. J. H. WILLARD, Maj. Engrs. 23-4t

90,000 YDS. OF STREET PAVING.

Shreveport, La., May 22, 1903.

Sealed proposals will be received by the City Comptroller at the City Hall up to 6 o'clock p. m., June 26, 1903, for the Paving of the following streets in the City of Shreveport, La.:

No. 1—Marshall St., Crockett to Davis; approximate square yards..... 9,756.5
No. 2—Louisiana St. and Ave., Lake to Jordan; approximate sq. yds... 16,453.1
No. 3—Western Ave., Sprague to Hope; approximate sq. yds............ 2,204.8
No. 4—Hope St., Western to Texas; approximate sq. yds............... 7,473.4
No. 5—Texas Road, Cedar to corporation line; approximae square yards.... 12,159.9
No. 6—Southern Ave., Jordan to Dashell; approximate square yards...... 4,418.7
No. 7—Cotton St., Marshall to Texas Ave; approximate square yards...... 7,212.3
No. 8—Commerce St., Cotton to Lake; approximate square yards 5,927.9
No. 9—Caddo St., Market to alley rear Ardis & Co.; approximate sq. yds.. 2,427.2
No. 10—Tannin St., Market to Commerce; approximate square yards...... 3,084.9
No. 11—Stower Ave., Louisiana to cemetery gate; approximate sq. yds... 11,273.1
No. 12—Irving Place, Jordan to Olive; approximate square yards.......... 6,851.54

The paving to be of brick or brick and asphalt, or Warren Bros.' Bitulithic Pavement, as per plans and specifications on file in the Engineer's Office.

Each street to be bid on separately, and all bids must be made on and in accordance with special blanks furnished by the City Engineer, under whose supervision all work will be done.

A certified check equal to 10% of the amount bid to accompany each bid as a guarantee that bidder, if successful, will furnish satisfactory bond and enter into contract as per his bid.

A maintenance bond of 10% of contract as let will be required of successful bidders for maintenance of work for five years.

The City reserves the right to reject any and all bids.

C. G. RIVES,
22-4t Comptroller.

SEALED PROPOSALS will be received at the office of the Light-House Engineer, Mobile, Ala., until 12 o'clock m. June 26, 1903, and then opened, for furnishing the materials and labor necessary for the construction and delivery of the Sabine Bank Light Station, Tex., in accordance with specifications, copies of which, with blank proposals and other information may be had upon application to Capt. WILLIAM E. CRAIGHILL, U.S.A., Engineer Eighth Light-House District. 22-4t

TRADE WITH MEXICO!

If you want to increase your business in Mexico read our special news reports from that country.

Mexico imports over $30,000,000 worth of goods a year from the United States,

or more than half of its imports. American machinery and supplies are needed in all parts of the country. "Engineering News" is sent to nearly all names mentioned in the items besides to a large list of regular paid subscribers.

They all are anxious to buy the latest machinery, tools, etc. Follow our Construction News and ADVERTISE in "Engineering News."

NOTICE OUR FOREIGN NEWS.

... and pages 336 and 337 of Supplement.

ADVERTISERS' CLASSIFIED DIRECTORY.

CONTINUED ON PAGE 159.

Agencies.
Moore, J D, 45 Liberty st, New York

Air Brakes.
Westinghouse Air Brake Co, Pittsburg, Pa

Air Compressors.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Air Compressor Wks, 26 Cortlandt st, N Y
American Well Works, Aurora, Ill
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen, N A, 212-17 Herman bldg, Milwaukee
Clayton Air Compressor Works, 114 Liberty st, N Y
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
d'Auria Pumping Engine Co, Drexel bldg, Phila
Fairbanks, Morse & Co, Chicago
General Pneumatic Tool Co, Montour Falls, N Y
Gray-Blaisdell Co, Bradford, Pa
Guild & Garrison, So 10th st, Brooklyn, N Y
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati O
McGowan, John H, Co Cincinnati, O
McKiernan Drill Co, 120 Broadway, N Y
Minneapolis Steel Mach'y Co, Minneapolis, Minn
Norwalk Iron Works, So. Norwalk, Conn
Rand Drill Co, 128 Broadway, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa

Air Drill.
Columbus Pneumatic Tool Co, Columbus, Ohio
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo

Air Hose Couplers
Clark Co, W J, Salem, Ohio

Aluminum.
Pittsburg Reduction Co, Pittsburg, Pa

Annealing Boxes.
McNeil, Jas, & Bro, 26th & Railroad sts, Pittsburg, Pa

Artesian Wells.
Bacon Air Lift Co, 100 Broadway, New York
Cole Bros, 102 Fulton st, New York
Conlan, F H & J, Newark, N J
Cook Well Co, St. Louis, Mo.
Gregory, Elisha, 123 Liberty st, New York
Phillips & Worthington, 11 Broadway, New York
Stothoff Bros, Flemington, N J
Williams Bros, Ithaca, N Y

Artesian Well Tools and Supplies.
Star Drilling Mach Co, 104 Fulton st, New York

Asphalt.
Commercial Asphalt Co, 11 Broadway, New York
Sicilian Asphalt Paving Co, Times bldg, New York
Warren Bros Co, 93 Federal st, Boston

Asphalt Machinery.
Cummer, F D, & Sons, Cleveland, O
Erie Machine Shops, Erie, Pa
Iroquois Iron Works, Buffalo, N Y

Batteries (Storage).
Coho & Co, H B, 114 Liberty st, New York

Bearings (Ball and Roller.)
Ball Bearing Co, 2322 Market st, Philadelphia
Bantam Mfg Co, Bantam, Conn
Standard Roller Bearing Co, Philadelphia

Balances. (Assay and Analytical.)
Ainsworth, Wm. & Sons, Denver, Colo

Belt Dressing.
Dixon, Jos., Crucible Co. Jersey City, N J
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Canvas.)
Main Belting Co, 1219 Carpenter st, Philadelphia

Belting (Chain)
Aultman Co, Canton, O
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Philadelphia

Belting (Leather)
Graton & Knight Mfg. Co, Worcester, Mass

Belt Lacing. (Steel.)
Bristol Co, Waterbury, Conn

Blast Furnaces.
Girard Boiler & Mfg Co, Girard, O
Means & Fulton Iron Works, Birmingham, Ala
Riter-Conley Mfg. Co, 56 Water st, Pittsburg, Pa

Blocks and Sheaves.
American Hoist & Derrick Co, St Paul, Minn
Boston & Lockport Blk. Co, 160 Commercial st, Boston
Hunt, C W Co, Richm'd Terrace, W N Brighton, N I
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
Yale & Towne Mfg Co, 9-13 Murray st, New York

Blowers.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Connersville Blower Co, Connersville, Ind
Mass. Fan Co, Waltham Mass
Roots, P H & F M Co, Connersville, Ind
Sturtevant, B F Co, Boston, Mass

Blue Printing Apparatus.
Elliott Electric Blue Print Co, Pittsburg.
Emerson Mfg. Co, F W, Rochester, N Y.
Keuffel & Esser Co, 127 Fulton st, New York
Pittsburg Blue Print Co, 1505-C Park bldg, Pittsburg
Soltmann, E G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston

Blue Print Paper.
Elliott Electric Blue Print Co, Pittsburg
Keuffel & Esser, 127 Fulton st, New York
Soltman, E.G, 123 E 42d st, New York
Spaulding Print Paper Co, 44 Federal st, Boston
(see also Instruments, Engineering, etc.)

Boiler Supplies.
Glasgow Iron Co, Pottstown, Pa

Boilers.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bacon, Earle C, 26 Cortlandt st, New York
Columbiana Boiler Co, Columbiana, Ohio
Du Bois Iron Works, Du Bois, Pa
Enterprise Boiler Co, Youngstown, O
Fairbanks, Morse & Co Chicago
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Works, East Boston, Mass
Iroquois Iron Works, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego, N Y
Leffel, Jas. & Co, Springfield, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
McNeil, Jas. & Bro, 26th & Railroad sts, Pittsburg
Means & Fulton Iron Works, Birmingham, Ala
Mundy, J S, Newark, N J
Petroleum Iron Wks Co, Washington, Pa
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Riter-Conley Mfg Co, 56 Water st, Pittsburg, Pa
Sharon Boiler Works, Sharon, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Variety Iron Works Co, Cleveland, Ohio
Warren City Tank & Boiler Works, Warren, O

Boilers (Water Tube.)
Babcock & Wilcox Co, 26 Cortlandt st, New York
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Keeler, E, Co, Williamsport, Pa

Bolt Clippers.
Helwig Mfg Co, St. Paul, Minn

Bolts. (Expansion.)
Church, Isaac, Toledo, O
Steward & Romaine Mfg Co, 120 N 6th st, Phila

Boots and Shoes.
Putman, H J, & Co, 38 Bridge sq, Minneapolis

Brakes.
Brill, J G Co, Philadelphia, Pa
(see also Air Brakes.)

Brass Rolling Machinery.
Poole, Robert, & Son Co, Baltimore, Md

Brick.
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Egyptian Silica Brick Process Co, Fredericksburg, Va
Jackson, John H, Albany, N Y
Johnsonburg Vit Brick Co, Johnsonburg, Pa
Mack Mfg Co, New Cumberland, West Virginia
McAvoy Vit Brick Co, 1345 Arch st, Philadelphia
Purington Paving Brick Co, Galesburg, Ill
Tomkins, Calvin, 120 Liberty st, New York
Western Brick Co, Danville, Ill

Brick. (Fire.)
Maurer, Henry, & Son, 422 E 23d st, New York
New York Fire Brick Co, 12th ave & 36th st, N Y
Syracuse Stoneware Co, Syracuse, N Y

Brick Bond
Union Brick Bond Co, Pittsburg, Pa

Brick Machinery.
Bonnot Co, Canton, Ohio
Drake, C T, 300 W Jackson Boulevard Chicago

Bridge (Concrete).
Aberthaw Construction Co, Boston, Mas

Bridge Operating Machinery.
Edwards, Jos. & Co, 414 Water st. New York
Vulcan Iron Works, Chicago

Bridge Railings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia, Pa
King Bridge Co, Cleveland, O
Massillon Bridge Co, Massillon, Ohio
Stupp Bros. Bridge & Iron Co, St. Louis, Mo

Bridges and Buildings.
American Bridge Co, New York
Baltimore Bridge Co, Cush st & B & O R R, Baltimore
Bellefontaine Bridge & Iron Co, Bellefontaine, Ohio
Berlin Construction Co, Berlin, Conn
Boston Bridge Works, 47 Winter st, Boston, Mass
Champion Bridge Co, Wilmington, Ohio
Chicago Bridge & Iron Co, Chicago
Clinton Bridge & Iron Works, Clinton, Iowa
Columbia Bridge Co, Pittsburg
Concrete-Steel Engineering Co, Park Row bldg N
Easton Foundry & Machine Co, Easton, Pa
Kinkleay, Jr., & Co., John, Pittsburg, Pa
Fort Pitt Bridge Works, Pittsburg, Pa
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Joliet Bridge & Iron Co, Joliet, Ill
Kenwood Bridge Co, First Nat. Bank bldg, Chicago
King Bridge Co, Cleveland, Ohio
Massillon Bridge Co, Massillon, Ohio
McClintic-Marshall Construction Co, Pottstown, Pa
Minneapolis Steel Machinery Co, Minneapolis, Minn
Mo. Valley Bridge & Iron Works, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, Ohio
New Castle Bridge Co Indianapolis
New England Structural Co, Boston, Mass
Parker, T A, 202-208 North First st, Terre Haute Ind
Passaic Rolling Mill Co, Paterson, N J
Penn Bridge Co, Beaver Falls, Pa
Pennsylvania Steel Co, Steelton, Pa
Phoenix Bridge Co, Phoenixville, Pa
Riter-Conley Mfg Co, 55 Water st, Pittsburg, Pa
Rogers Iron Co, Springfield, O
San Francisco Bridge Co, 220 Market st, San Franc
Scaife, W B, & Sons Co, Pittsburg, Pa
Shoemaker, Lewis F, & Co, Harrison bldg, Pa
Standard Bridge Co, Omaha
Strobel, C L, Monadnock block, Chicago, Ill
Stupp Bros. Bridge & Iron Co, St. Louis, Mo
Vale & Young, Baltimore, Md
Variety Iron Works Co, Cleveland, Ohio
Virginia Bridge & Iron Co, Roanoke, Va
Wabash Bridge & Iron Works, Wabash, Ind
Youngstown Bridge Co, 320 Broadway, New York

Bridges (Rolling Lift.)
Scherzer Rolling Lift Bridge Co, Chicago

Buckets (Automatic.)
Brown Hoisting Machinery Co, Cleveland
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Stuebner, G L, Long Island City, N Y
Union Iron Works, Hoboken, N J

Buckets (Elevator).
Clark Co, W J, Salem, Ohio

Building Blocks (Concrete)
Palmer Hollow Concrete bldg Block Co, Wash, D C.

Bumping Posts.
McCord & Co, 1445 Old Colony bldg, Chicago
Mechanical Mfg Co, Chicago

Bunkers (Suspension.)
Berquist, A S, 515 Bedford ave, Brooklyn, N Y

Burners (Oil.)
Hammel, C A 120 Fifth st, Los Angeles, Cal

Cableways (Suspension.)
Bacon, Earle C, 26 Cortlandt st, New York
Beatty M, & Sons, Welland, Ont
Broderick & Bascom Rope Co, St. Louis
Carson French Machine Co, 19 Dorrance st, Boston
Flory, S, Mfg Co, Bangor, Pa
Lambert Hoisting Engine Co, Newark, N J
Leschen, A, & Sons Rope Co, St. Louis
Lidgerwood Mfg Co, 96 Liberty st, New York
Macomber & Whyte Rope Co, 21 S. Canal st, Chicago
N. J. Foundry & Machine Co, 9 Murray st, N Y
Trenton Iron Co, Trenton, N J
United Teipherage Co, 20-22 Broad st, New York

Calking Yarn and Tools.
Ogden, J. Edward. Co, 149 Cedar st, New York

Car Couplers.
McConway & Torley Co Pittsburg, Pa
Railroad Supply Co, Bedford bldg, Chicago

Car Heating and Lighting.
Brill Co, J G, Philadelphia, Pa
Safety Car Heating & Lighting Co, 160 B'way, N Y

Car Trucks.
Brill, Co, J G. Philadelphia, Pa

Car Wheels.
Brill Co, J G, Philadelphia, Pa
Cayuta Wheel & Foundry Co, Sayre, Pa
Ramapo Iron Works, Hillburn, N Y

Cars (Dump, Plantation, Flat, Hand, Logging Mining and Freight.)
Apex Equipment Co, 11 Broadway, New York
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G. Co, Philadelphia, Pa
Commercial Ky Equipment Co, 120 Liberty st, N Y
Continental Equipment Co, 5-17 Battery Place, N Y
Efros Co, Chas, Bayonne, N J
Fairbanks, Morse & Co, Chicago
Ingoldsby Auto. Car Co, Chemical bldg, St. Louis
Koppel, Arthur, 68 Broad st, New York
National Drill & Mfg Co, 1504 La Salle st, Chicago
Pressed Steel Car Co, Pittsburg, Pa
Ramapo Iron Works, Hillburn, N Y
Standard Steel Car Co, Frick bldg, Pittsburg
Steubner, G L, 176 Third st, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Narrow Gage.)
Brill, J G Co, Philadelphia, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, N Y
Koppel, Arthur, 68 Broad st, New York
Western Wheeled Scraper Co, Aurora, Ill
Wonham-Magor Eng. Wks, 29 Broadway, New York

Cars (Passenger & Freight.)
Brill, J G, Co, Philadelphia, Pa
Koppel, Arthur, 68 Broad st, New York

Cars (Wrecking & Ditching.)
Bucyrus Co, S. Milwaukee, Wis
Case Mfg Co, Columbus, O
Osgood Dredge Co, 37 State st, Albany N Y

Castings (Brass.)
Campbell, J B, Brass Works, Cascade st, Erie Pa

Castings (Iron.)
Builders Iron Foundry, Providence, R I
Brooks, T H, & Co, Cleveland, O
Coldwell-Wilcox Co, Newburg, N Y
Columbia Machine Works, 241 Chestnut st, Brooklyn
Dimmick Pipe Co, Birmingham, Ala
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Du Bois Iron Works, Du Bois, Pa
Easton Foundry & Machine Co, Easton, Pa
Fox, John & Co, 253 Broadway, N Y
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Genesee st, Utica, N Y
Poole, Robert, & Son Co, Baltimore, Md
Reading Foundry Co, Ltd, Reading, Pa
Sessions Foundry Co, Bristol, Conn
Variety Iron Works Co, Cleveland, O
Warren Foundry & Machine Co, 160 Broadway, N Y
(see also Sewer and Street Castings)

Cement (Portland.)
Alpha Portland Cement Co, Easton, Pa
Alsen's Am Portland Cement Wks, 45 Broadway, N Y
American Cement Co, 22 S 15th st, Philadelphia, Pa
Atlas Portland Cement Co, 30 Broad st, New York
Buckeye Portland Cement Co, Bellefontaine, Ohio
Coplay Cement Mfg Co, 1123 Broadway, N Y
Empire Portland Cement Co, Warners, N Y
Fredenburg & Lounsbury, Metropolitan bldg, N Y
French, Samuel H, & Co, Philadelphia
General Supply & Construct'n Co, 8-10 Bridge st, N
Giens Falls Portland Cement Co, Glens Falls, N Y
Hartranft, Wm G, Cement Co, Philadelphia
Heidelberg Cement Co, Albany, N Y
Illinois Steel Co, Rookery, Chicago
Kelley Island Lime & Transport Co, Cleveland, Ohio
Lawrence Cement Co, 1 Broadway, New York
Lehigh Portland Cement Co, Allentown, Pa
Sinclair & Babson, 45 Broadway, New York
Snyder, Hiram, & Co, 229 Broadway, New York
St Louis Portland Cement Co, St Louis
Tuorn Cement Co, 112 Church st, Buffalo, N Y
Vulcanite Portland Cement Co, 160 Fifth ave, N Y
Warner, Chas, Co, Wilmington, Del

Cement (Rosendale.)
Consolidated Rosendale Cem. Co, 26 Cortlandt st, N Y
Coplay Cement Mfg Co, 1123 Broadway, N Y
Cumberland (Md.) Cement & Mfg Co, P O Box 264
Meacham & Wright, Chamber of Commerce, Chicago
Milwaukee Cement Co, Milwaukee, Wis
Snyder, Hiram, & Co, 229 Broadway, New York
Tomkins, Calvin, 120 Liberty st, New York
Union Rosendale Cement Co, 141 Erie st, Buffalo, N Y
Western Cement Co, Louisville, Ky

Cement Kilns and Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
Bartlett, C O, & Snow Co, Cleveland, Ohio
Bonnot Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark, J C, Box 625, Atlanta, Ga
Dodge Mfg Co, Mishawaka, Indiana
Kent Mill Co, 170 Broadway, New York
Jeffrey Mfg Co, Columbus, Ohio
Smidth, F L, & Co, 66 Maiden Lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Vulcan Iron Works, Wilkesbarre, Pa
West Pulverizing Mach. Co, Jersey City, N J

Cement Mixer.
Alexander Iron Works, Syracuse, N Y

Chain Blocks.
Yale & Towne Mfg Co, 9-13 Murray st, New York

Chains.
Newhall Chain Forge & Iron Co, 9 Murray st, N Y

Channelers.
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago. Ill

Chemists.
McKenna, Chas. F, 221 Pearl st, N Y
(see also Laboratories.)

Chimneys. (Brick.)
Custodis, A. Chimney Const'n Co, Bennett bldg. N Y

Coal and Ore Handling Machinery.
Aultman Co, Canton, Ohio
Bacon, Earle C, 26 Cortlandt st, New York
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Brown Hoisting Machinery Co, Cleveland, O
Exeter Machine Works, Pittston, Pa
Hayward Co, 97 Cedar st, New York
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, Ohio
King Bridge Co, Cleveland, Ohio
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, N Y
Link Belt Engineering Co, Nicetown, Phila
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, New York
N. J. Foundry & Machine Co, 9 Murray st, New York
Rawson & Morrison Mfg Co, Cambridgeport, Mass
Robins Conveying Belt Co, 14-21 Park Row, N Y
Simpson, H S, Electric bldg, Cleveland
Steubner, G L, 175 Third st, Long Island City, N Y

Colleges (Engineering.) (see page IV.)

Concentrators.
Allis-Chalmers Co, Home Ins bldg, Chicago

Concrete Mixers.
Clyde Iron Works, Duluth, Minn
Cockburn Barrow & Mach. Co, Jersey City, N J
Contractors' Equip Co 447 W 5th st, Kansas City, Mo
Contractor's Plant Co, 37 Pittsburg st, Boston
Contractors' Supply & Equip. Co, 232 5th av, Chicago
Drake, C T, 300 W Jackson Boulevard, Chicago
Gilbreth, Frank B, 176 Federal st, Boston
Iroquois Iron Works, Buffalo
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
McKelvey Concrete Mach'y Co, Security bldg, Chicago
Municipal Eng & Contr'g Co, Manhattan bldg, Chicago
Ransome Concrete Mach'y Co, 11 Broadway, N Y

Concrete Building Apparatus.
Farrell, Thos C, Washington, New Jersey

Concrete Steel Construction
Aberthaw Con. Co, 12 Beacon st, Boston, Mass
Concrete Steel Eng. Co, Park Row Bldg, N Y
Ransome Concrete Machinery Co, 11 Broadway, N Y
Ransome & Smith Co, 11 Broadway, N Y
St. Louis Exp. Metal Co, St. Louis, Mo.
Turner Cons. Co, 11 Broadway, N Y

Condensers.
Alberger Condenser Co, 95 Liberty st, N Y
Allis-Chalmers Co, Home Ins bldg, Chicago
Davidson M T, 58 Keap st, Brooklyn, N Y
Dean Bros, Steam Pump Works, Indianapolis, Ind
Epping-Carpenter Co, Pittsburg
Guild & Garrison, So 10th st, Brooklyn, N Y
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Conduits (Pipe.)
Blackmer & Post Pipe Co, St. Louis, Mo
Eppinger & Russell Co, 66 Broad st, New York
Field, C J, 29 Broadway, New York
Standard Vitrified Conduit Co, 30 Cortlandt st. N Y
Standard Sewer Pipe Co, Rochester, N Y
Wyckoff Pipe & Creosoting Co., Stamford, Conn

Contractors.
Abbot-Gamble Contracting Co, St. Louis and N Y
American Pipe Mfg Co, 112 N Broad st, Philadelphia
Bates & Rogers Const'n Co, 1203 Manhattan bldg, Chic
Cook Well Co, St. Louis, Mo
Eastern Construction Co, 48 Classon ave, Brooklyn, NY
Eichleay, John, Jr, Co, Pittsburg
Esson, W A, & Co 1137 Stock Exchange bldg, Chicago
Foundation & Contracting Co, 37 Nassau st, New York
Gahagan, W H, 189 Montague st, Brooklyn, N Y
Gest, G M, Cincinnati and New York
Gilbreth, Frank B, 176 Federal st, Boston
Gillespie, T A, Co, Westinghouse bldg, Pittsburg, Pa
McCabe, Jas. F, 504 Equitable bldg, Baltimore, Md
McMullen, Arthur & Co, 13-21 Park Row bldg, N Y
Murphy, J M & Co, Windsor Arcade, N Y
O'Rourke, John F, Park Row bldg, New York
Phillips & Worthington, 11 Broadway, New York
Quigley, R M, & Co. Laclede bldg, St. Louis, Mo
Regan & Mulock, D P, 4429 Chestnut st, Philadelphia
Snare & Triest, 39 Cortlandt st, New York
United Eng & Con Co, 13-21 Park Row, New York
(see also Artesian Wells; Asphalt Paving; Bridges; Dredging; Wharf and Pier Builders.)

Contractors' Tools and Supplies.
Bond, H L, & Co, Pearl & Purchase sts, Boston, Mass
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
Crane & Co, inc, A M, The Rookery, Chicago
Gilbreth, Frank B, 176 Federal st, Boston
Kennedy & Co, L. E., 17 Broadway, New York
Maxfield, H E, & Co, 136 Liberty st, New York
Shannon, J Jacob, & Co, 1744 Market st, Philadelphia
Standard Supply & Equipment Co, Philadelphia
Wickes Bros New York and Saginaw, Mich

Conveyors. (See Hoisting and Conveying Machinery; also see Trench Machines.)

Cooling Towers.
Alberger Condenser Co, 95 Liberty st, New York
Davidson, M T, 58 Keap st, Brooklyn, N Y
Worthington, Henry R, Brooklyn, N Y

Cranes.
Am. Hoist & Derrick Co, St. Paul, Minn
Brown Hoisting Machinery Co, Cleveland, O
Bucyrus Co, S Milwaukee, Wis
Case Mfg Co, Columbus, Ohio
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Industrial Works, Bay City, Mich
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Manning, Maxwell & Moore, 85 Liberty st, New York
Marion Steam Shovel Co, Marion, Ohio
Niles Tool Works Co, 136-138 Liberty st, New York
Pawling & Harnischfeger, 167 Clinton st. Milwaukee
Wood, R D, & Co, Philadelphia, Pa

Cranes (Portable).
North Penn Iron Co, 3d & Sedgley ave, Philadelphia

Creosoting.
American Creosote Works, New Orleans
Atlantic Creo & Wood Pres Works, Norfolk, Va
Carbolineum Wood Preserving Co, 13 Park Row, N Y
Eppinger & Russell Co, 66 Broad st, New York
International Creosoting & Con. Co, Galveston, Tex
New Orleans Wood Pres Works, New Orleans, La
Norfolk Creosoting Co, Norfolk, Va
Southern Creosoting Co, Slidell, La
U S Wood Preserving Co, 29 Broadway, New York
West Pascagoula Creosote Wks, W Pascagoula, Miss
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Crucibles.
Dixon, Jos., Crucible Co, Jersey City, N J

Damper Regulators.
d'Este, Julian Co, 15 Canal st, Boston

Derrick and Derrick Fittings.
American Hoist & Derrick Co, St. Paul, Minn
Byers, John F, Machine Co, Ravenna, Ohio
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Lobbie Foundry & Machine Co, 138 Dey st, N Y
Hayward Co, 97 Cedar st, New York
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
Lambert Hoisting Engine Co, Newark, N J

Diamond Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Sullivan Machinery Co, 135 Adams st, Chicago

Differential Hoists.
Boston & Lockport Block Co, Boston, Mass

Ditching and Excavating Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, S. Milwaukee, Wis
Carson Trench Machine Co, 19 Dorrance st, Boston
Hayward Co, 97 Cedar st, New York
Marion Steam Shovel Co, Marion, Ohio
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, 12 Post Office Square, Boston
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago
Vulcan Iron Works Co, Toledo
Western Wheeled Scraper Co, Aurora, Ill

Diver.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill

Diving Apparatus.
Morse, Andrew J, & Son, 140 Congress st, Boston
Schrader's, A, Son, 32 Rose st, New York

Docks (Composite and Steel Floating).
Crandall, H I, & son Co, East Boston, Mass

Doors and Door Fittings.
Kinnear Mfg Co, Columbus, Ohio
N. J. Foundry & Machine Co, 9 Murray st, N Y
Wilson, J Godfrey, 3 W 29th St, N Y

Drafting Tables.
Emerson Mfg. Co, F W, Rochester, N Y
Hein Furniture Co, Toledo, O

Draftsmen's Supplies. (see Instruments.

Drain Tile (see Pipe, Vitrified Clay.)

Dredging and Dredging Machinery.
Atlantic, Gulf & Pacific Co, Park Row bldg, N Y
Beatty, M, & Sons, Welland, Ont
Bowers, A B, San Francisco, Cal
Bucyrus Co, S Milwaukee, Wis
Edwards, Jos., & Co, 414 Water st, New York
Ellicott Machine Co, Baltimore, Md
Falcon, Jos, G, 1110 Ayres Court, Evanston, Ill
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Hayward Co, 97 Cedar st, New York
Lawrence Machine Co, Lawrence, Mass
Marion Steam Shovel Co, Marion, Ohio
Morris Machine Works, Baldwinsville, N Y
Mundy, J S, Newark, N J
Osgood Dredge Co, Albany, N Y
Smith, Theo., & Bro, Jersey City, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works Co Toledo

Drilling and Boring Machines (Portable).
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
Knight Mfg Co, Canton, Ohio
Philadelphia Pneumatic Tool Co, Philadelphia
Stow Flexible Shaft Co, 26th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y
(see also Pneumatic Tools; also Rock Drills).

Drop Forgings.
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila

Drop Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Dry Docks (Marine Railway).
Crandall, H I, & Son Co, East Boston, Mass

Dryers (Cement).
American Process Co, 62 William st, New York
Bartlett, C O, & Snow Co, Cleveland, O
Crown Dryer Co, 1291 Euclid ave, Cleveland
Cummer, F D, & Son Co, Cleveland, O
Ruggles-Coles Engineering Co, 41 Cortlandt st, N Y
Simpson, H S, Mfg's Agt, Electric bldg, Cleveland
West Pulverizing Machine Co, Jersey City, N J

Dynamite (see Explosives).

Dynamos.
C & C Electric Co, Central R R bldg, New York
Coho & Co, H B, 114 Liberty st, New York
General Electric Co, Schenectady, N Y
Storey Motor & Electric Co, Harrison, N J
Stow Mfg Co, Binghamton, N Y
Westinghouse Electric & Mfg Co, Pittsburg, Pa

Economizers (Fuel).
Green Fuel Economizer Co, Matteawan, N Y
Broomell, Schmidt & Steacy Co, York, Pa

Electric Storage Batteries.
Electric Storage Battery Co, Philadelphia

Elevators.
Marine Engine & Machine Co, 1123 Broadway, N Y
Morse Elevator Works, Philadelphia
Otis Elevator Co, 71 Broadway, N Y

Employment Bureaus.
Brotherhood Steam Shovel & Dredge Engrs., Chicago
Cleveland Engineering Agency, Box 71, Sta. B, Cleve
Engineering Agency, Monadnock blk, Chicago, Ill
Engineering Employment Bureau, Syracuse N Y
Hapgood Bureau, 257 Dearborn st, Chicago
New York Engineering Agency, 35 Warren st, N Y
Yuzzolino, W, 73 Murray st, New York

Engines. (Gas and Gasoline).
American Well Works, Aurora, Ill
Backus Water Motor Co, Newark, N J
Chase Machine Co, Cleveland
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Fairbanks, Morse & Co, Chicago, Ill
Maxfield, H E, & Co, 136 Liberty st, New York
Mietz & Weiss, 128 Mott st, New York
New Era Iron Work Co, 37 Dale ave, Dayton, O
Otto Gas Engine Works, Philadelphia, Pa
Snow, T W, (Otto Engine) 360 Dearborn st, Chicago
Springfield Gas Engine Co, Springfield, O
Struchers-Wells Co, Warren, Pa
Temple Pump Co, 15th Place, Chicago
U. S. Wind Eng. & Pump Co, 20 Water st, Batavia, Il
(see also Engines, Oil.)

Engines (Hoisting).
American Hoist & Derrick Co, St. Paul, Minn
Bacon, Earle C, 26 Cortlandt st, New York
Beatty, M, & Sons, Welland, Ont
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F., Machine Co, Ravenna, Ohio
Chase Machine Co, Cleveland
Contractors' Plant Mfg Co, 130 Erie st, Buffalo, N Y
Fairbanks, Morse & Co, Chicago, Ill
Flory, S, Mfg Co, Bangor, Pa
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg Co, 96 Liberty st, New York
Monighan's Machine Works, 513 Carroll ave, Chicago
Mundy, J S, Newark, N J
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind
Rawson & Morrison Mfg Co, Cambridgeport, Mas
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre, Pa
(see also Electric Hoists.)

ADVERTISERS' CLASSIFIED DIRECTORY.

Engines (Marine).
Buffalo Forge Co, Buffalo, N Y
Kingsford Foundry & Machine Works, Oswego N Y
Morris Machine Works, Baldwinsville, N Y
Otto Gas Engine Works, Philadelphia, Pa

Engines (Oil).
Aultman Co, Canton, Ohio
Mietz & Weiss, 128 Mott st, New York

Engines (Portable).
Buffalo Pitts Steam Boiler Works, Buffalo, N Y
Port Huron Engine Co, Port Huron, Mich

Engines (Steam).
Allis-Chalmers Co, Home Ins bldg, Chicago
Buffalo Forge Co, Buffalo, N Y
Erie Pump & Engine Co, Erie, Pa
Fairbanks, Morse & Co, Chicago
Featherstone Fdy & Mach Co, 348 N. Halsted, Chicago
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Lawrence Machine Co, Lawrence, Mass
Leffel, Jas. & Co, Springfield, O
Maxfield, H E, & Co, 138 Liberty st, New York
Minneapolis Steel Mach'y Co, Minneapolis, Minn
Morris Machine Works, Baldwinsville, N Y
Southwark Foundry & Machine Works, Philadelphia
Sturtevant, B F, Co, Boston, Mass
Struthers, Wells & Co, Warren, Pa
Sullivan Machinery Co, 135 Adams st, Chicago
Vulcan Iron Works, Wilkesbarre Pa

Engines (Traction).
Aultman Co, Canton, O
Reisler, Chas. L, Erie, Pa
Kelly, O S, Co, Springfield, O
Port Huron Engine Co, Port Huron, Mich

Excavators and Excavating Machinery
(see Ditching and Excavating Machinery and Steam Shovels.)

Exhaust Heads
Burt Mfg. Co, Akron, O

Expanded Metal.
Assoc Exp Metal Cos. Room 1209, 256 Broadway, N Y
General Fireproofing Co, Youngstown, O
Truss Metal Lath Co, 40 Gold st, New York
Youngstown Iron & Steel Roofing Co, Youngstown, O

Explosives.
Explosives Mfg Co, Elmira, N Y
Electric Exploder Co, 120 Liberty st, N Y
Kirk, Arthur & Son, Co, 910 Duquesne Way, Pittsburg

Faucets.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Feed Water Heaters.
Allis-Chalmers Co, Home Ins bldg, Chicago
Erie Machine Shops, Erie, Pa
Gem City Boiler Co, Dayton, O
Green Fuel Economizer Co, Matteawan, N Y
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Patterson, Frank L, & Co, 25 Church st, New York
Robertson, Jas. L, & Sons 192 Fulton st, New York
Stilwell-Bierce & Smith-Valle Co, Dayton, O

Feed Water Purifiers.
Industrial Water Co, 126 Liberty st, New York
Pittsburg Filter Mfg Co, Pittsburg, Pa
Smith, W B, Perth Amboy, N J

Fencing. (Wire).
American Steel & Wire Co, New York & Chicago
International Fence & Fireproofing Co, Columbus, O
Lamb Wire Fence Co Adrian, Mich

Filler. (Leather).
Butler, A G, 284 Pearl st, New York

Filing Cases.
Art Metal Construction Co, Jamestown, N Y
General Fireproofing Co, Youngstown, O

Filter Presses.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio

Filters.
Stilwell-Bierce & Smith-Valle Co, Dayton, O
Deutsch, W M, 141 Broadway, N Y
Jackson Filter Mfg Co, St Louis
Loomis-Manning Filter Co, Philadelphia, Pa
N Y Continental-Jewell Co, 15 Broad st, N Y
Norwood Engineering Co, Florence, Mass
Pittsburg Filter Mfg Co, Pittsburg, Pa
Ross Valve Co, Troy, N Y
Scaife, Wm. B, & Sons Co, Pittsburg

Filters (Oil).
Burt Mfg Co, Akron, O
Robertson, Jas L, & Sons, 92 Fulton st, New York

Fire Department Supplies.
Morse, Andrew J, & Son, 140 Congress st, Boston, Mass

Fire Proofing.
Aberthaw Construction Co, Boston, Mass
Berger Mfg Co, Canton, O
Bromley, A H, Jr, 112 N Broad st, Philadelphia
Hennebique Patents 1123 Broadway, N Y
Metropolitan Fire Proofing Co, Trenton, N J
Ransome Concrete Machinery Co, 11 Broadway, N Y
Ransome & Smith Co, 11 Broadway, N Y
Roebling Construction Co, 121 Liberty st, New York
St Louis Expanded Metal Fireproofing Co, St Louis
Wight, W N, & Co, 160 Fifth ave, New York
(see also Expanded Metal, also Concrete Steel Construction.)

Fire Proofing (Hollow Tile).
Maurer, Henry & Sons, 422 E 23d st, New York

Fire Proofing (Wood).
Electric Fireproofing Co, 19th st, and East River, N Y

Fittings (Flanged).
McLeod Co, 95 Liberty st, New York

Flexible Pipe Joint.
Falcon, Jos. G, 1110 Ayres Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Flexible Shafts.
Stow Flexible Shaft Co, 16th & Callowhill sts, Phila
Stow Mfg Co, Binghamton, N Y

Flue Lining (Fire Clay).
Jackson, John H, Albany, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th sts, N Y

Flush Tanks.
Pacific Flush Tank Co, 48 La Salle st, Chicago Ill

Fly Wheels.
Poole, Robert, & Son Co, Baltimore, Md

Forges (Portable).
Buffalo Forge Co, Buffalo, N Y
Roots, P H & F M, Co, Connersville, Ind
Tate, Jones & Co, Pittsburg Pa

Forgings.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Baker, Jas H, Mfg Co, 506 Park bldg, Pittsburg, Pa
Brill, J G, Co, Philadelphia, Pa
Cleveland City Forge & Iron Co, Cleveland
Keystone Drop Forge Wks, 2001-63 Clearfield st, Phila
Pennsylvania Steel Co, Steelton, Pa

Friction Clutches.
Brown Hoisting Machinery Co, Cleveland
Dodge Mfg Co, Mishawaka, Indiana
Link Belt Engineering Co, Nicetown, Philadelphia
Smith, S Morgan, Co, York, Pa

Frogs, Switches and Crossings.
Elliot Frog & Switch Co, East St. Louis, Ill
Koppel, Arthur, 66-68 Broad st, N Y
N Y Switch & Crossing Co, Hoboken, N J
Pennsylvania Steel Co, Steelton, Pa
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Fuel Economizers (see Economizers).

Furnaces (Gas).
American Gas Furnace Co, 23 John st, New York

Furnaces (Oil).
Petroleum Iron Works Washington, Pa
Tate, Jones & Co, Empire bldg, Pittsburg

Furniture (Steel).
General Fireproofing Co, Youngstown, O

Gages (Steam).
Crosby Steam Gage & Valve Co, Boston

Galvanized Iron and Steel.
Am Sheet Steel Co Battery Park bldg, New York

Galvanizing Kettles.
Columbiana Boiler Co Columbiana, Ohio
Enterprise Boiler Co, Youngstown, Ohio

Garbage Dump Carts (see Wagons and Carts).

Garbage Furnace.
Morse-Boulger Destructor Co, 39 Cortlandt st, N Y
Smith-Siemens Garbage Furnace, 141 Broadway, N Y

Gas Exhausters.
Roots, P H & F M, Co, Connersville, Ind

Gas Fittings.
Campbell, J B, Brass Works, Cascade st, Erie, Pa

Gas Holders.
Wood, R D, & Co, 400 Chestnut st, Philadelphia
(see also Stand-Pipes and Tanks.)

Gas Machinery.
American Gas Furnace Co, 23 John st, New York
Gas Machinery Co, Cleveland, O
National Drill & Mfg Co, Chicago, Ill
Norwalk Iron Works, South Norwalk, Conn
Roots, P H, & F M, Co, Connersville, Ind
Wood, R D, & Co, Philadelphia, Pa

Gas Works.
Gas Machinery Co, Cleveland, Ohio

Gaskets.
McCord & Co, 1445 Old Colony bldg, Chicago
U. S. Mineral Wool Co, 143 Liberty st, New York

Gates (Railway).
International Fence & Fireproofing Co, Columbus, O
Pneumatic Signal Co, 1122 Broad-Exchange bldg, N Y

Gearing.
Caldwell, H W, & Son Co, Chicago
Morse Elevator Works, Philadelphia
Poole, Robert, & Son Co, Baltimore, Md
Smith S. Morgan, Co, York, Pa

Gear-Wheels.
Taylor Iron & Steel Co, High Bridge, N J

Gloves (Hand Made).
Luther, J P, Glove Co, 526 Pearl st, Berlin, Wis

Governors (Water-Wheel).
Lombard Governor Co, 36 Whittier st, Boston
Replogle Governor Works, Chestnut st, Akron, O

Graders.
Austin Mfg Co Manhattan bldg, Chicago
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
Shuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Grain Elevators (see Tanks, grain storage.)

Granite (see Stone, also Paving Blocks).

Graphite.
Detroit Graphite Mfg Co, Detroit, Mich
Dixon Jos., Crucible Co, Jersey City, N J
Goheen Mfg Co, Canton, Ohio
Internat'l Acheson Graphite Co, Niagara Falls, N Y

Grate Bars.
Dobbie Foundry & Mach Co, 138 Dey st, N Y
Robertson, Jas L, & Sons, 192 Fulton st, New York

Greenhouses.
Plenty, Josephus, Jersey City, N J

Hanger (Joist).
Clark Co, W J, Salem, Ohio
Columbian Hardware Co, Cleveland, Ohio
Duplex Hanger Co, Cleveland, Ohio

Headlights (Locomotive).
Brill, J G, Co, Philadelphia
Dressel Ry Lamp Works, 3876 Park ave, New York
Railroad Supply Co, Bedford bldg, Chicago

Heating and Ventilating (Steam & Hot Water
American Blower Co, Detroit
Am. District Steam Heating Co, Lockport, N Y
Keeler, E, Co, Williamsport, Pa
Mass. Fan Co., Waltham, Mass

Hoisting Engines (see Engines, Hoisting).

Hoisting and Conveying Machinery.
Aultman Co, Canton, O
Beatty, M, & Sons, Welland, Ont
Bartlett, C O, & Snow Co, Cleveland, O
Brown Hoisting Machinery Co, Cleveland, O
Byers, John F, Machine Co, Ravenna, O
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Cress, Geo. V, Philadelphia
Carson Trench Machine Co, Boston, Mass
Contractors' Equip Co, 447 W 5th st, Kansas City, Mo
Dodge Mfg Co, Mishawaka, Indiana
Exeter Machine Works, Pittston, Pa
Garland, M. Co, Bay City, Mich
Hunt, C W, Co, Richmond Terrace, W N Brighton NY
Jeffrey Mfg Co, Columbus, Ohio
Kaltenbach & Griess, 1618 Williamson bldg, Cleveland
King Bridge Co, Cleveland, Ohio
Lidgerwood Mfg Co, 96 Liberty st, New York
Lambert Hoisting Engine Co, Newark, N J
Link Belt Engineering Co, Nicetown, Philadelphia
Main Belting Co, 1219 Carpenter st, Philadelphia
Mead, John A, & Co, 7 Broadway, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Robins Conveying Belt Co, 14-21 Park Row, N Y
Steel Cable Engineering Co, 120 Liberty st, New York
Trenton Iron Co, Trenton, N J
Union Iron Works, Hoboken, N J
United Telpherage Co, 20-22 Broad st, N Y

Hoists (Electric).
Hunt, C W, Co, Richmond Terrace, WN Brighton, NY
Lambert Hoisting Engine Co, Newark, N J
Lidgerwood Mfg. Co, 96 Liberty st, N Y
Pawling & Harnischfeger, 167 Clinton st, Milwaukee
Rawson & Morrison Mfg Co, Cambridgeport, Mass
United Telpherage Co, 20-22 Broad st, New York

Hoists (Pneumatic).
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Christensen N A, 1212-1 Herman bldg, Milwaukee
General Pneumatic Tool Co, Montour Falls, N Y

Hooks (Hoist, Grab, etc.)
Baker, Jas. H, Mfg Co, 506 Park bldg, Pittsburg
Roebling's, John A. Sons Co, Trenton, N J

Hose (Metal).
Moore Chas. C. & Co, 32 First st, San Francisco

Hose (Rubber).
McKiernan Drill Co, 170 Liberty st, N Y

Hose (Suction).
Edson Mfg Co, 255 Atlantic ave, Boston

Hydrants and Valves.
Bourbon Copper & Brass Works, Cincinnati, O
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Clow, J B & Sons, Lake & Franklin sts. Chicago
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Drummond, M J, & Co, 192 Broadway, N Y
Fox, John & Co, 253 Broadway, N Y
Kennedy Valve Mfg Co, 50 Beekman st, N Y
Loetzer Valve & Mfg Co, Towanda, Pa
Ludlow Valve Mfg Co, Troy, N Y
McLean, John, 298 Monroe st, New York
Millar, Chas. & Son, Co, Utica, N Y
Norwood Engineering Co, Florence, Mass
Reading Foundry Co, Ltd, Reading, Pa
Ross Valve Co, Troy, N Y
Smith, A P, Mfg Co, Newark, N J
Thompson, J, & Co, Philadelphia, Pa
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Jacks.
Watson-Stillman Co 210 E. 43d st, New York

Hydraulic Leather Packing.
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Detroit Leather Specialty Co, 900 Michigan av, Detroit

Hydraulic Machinery.
Dayton Globe Iron Work Co, 7 Ludlow st, Dayton, O
Deming Co, Salem, Ohio
Pelton Water Wheel Co 134 Main st, San Francisco
Power Specialty Co, 126 Liberty st, New York
Watson-Stillman Co, 210 E 43d st, New York
Wood, R D, & Co, Philadelphia, Pa

Hydraulic Presses.
Watson-Stillman Co, 204 E 43d st, New York
Wood, R D & Co, 400 Chestnut st, Philadelphia

Hydraulic Rams.
Pelton Water Wheel Co, 134 Main st, San Francisco
Power Specialty Co, 126 Liberty st, New York

Ice and Refrigerating Machinery.
Featherstone Fdy & Mach Co. 348 N Halsted, Chicago

Indicators (Steam Engine).
Ashcroft Mfg Co, 85 Liberty st, New York
Crosby Steam Gage & Valve Co, Boston, Mass
Robertson, Jas L. & Sons, 192 Fulton st, N Y

Injectors.
Hayden & Derby Mfg Co, 85 Liberty st, New York
Lunkenheimer Co. Cincinnati, Ohio

Instruments (Engineering, Drafting).
Ainsworth, Wm, & Sons, Denver Colorado
Albrecht, C. R., 62 Fulton st, New York
Aloe, A S, Co, 414 N Broadway, St. Louis, Mo
Alteneder, Theo, & Sons, 945 Ridge ave, Phila, Pa
Archts' & Engrs' Supply Co, 1011 Walnut st, Kan. City
Beckman, L, 57 Adams st, Toledo, Ohio
Berger, C L, & Sons, 37 Williams st, Boston, Mass
Brandis, F E, Sons & Co, 814 Gates ave, Brooklyn, NY
Brown & Sharpe Mfg Co, Providence, R I
Buff & Buff Co, J P Station, Boston, Mass
Dietzgen, Eugene, Co, 181 Monroe st, Chicago
Engineers' Instrument Exchange, Scranton, Pa
Gurley, W & L E, Troy, N Y
Hardtmuth, L & C, 49 Barclay st, New York
Heller & Brightly Spring Garden st & Ridgeav, Phila
Hetterscheid Mfg Wks, Grand Rapids, Mich
Keuffel & Esser Co, 127 Fulton st New York
Knight, F C, & Co, 400 Locust ave, Philadelphia Pa
Koelsch & Co, 138 Fulton st, New York
Ledder, G G, 302 School st, Boston
Lietz, A, Co, 422 Sacramento st, San Francisco, Cal
Mahn & Co, 300-302 Olive st, St. Louis
Pfister, Herm, 428 Plum st, Cincinnati, O
Prince, L M, 108 West 4th st, Cincinnati, O
Queen & Co, Inc, Philadelphia, Pa
Saegmuller, G N, Washington, D C
Sala, J C, 429 Montgomery st, San Francisco
Schwencke, Kirk & Co, 26 Church st, New York
Soltmann, E G, 123 E 42d st, New York
Stackpole & Bro, 39 Fulton st, New York
Stanley, W F, & Co, Great Turnstile, Holborn, London
Ulmer, J C, & Co, 224 Champlain st, Cleveland, Ohio
Universal Drafting Mach Co, Blackstone bldg, Cleve
Weber, F, & Co, Philadelphia
Williams, Brown & Earle, 918 Chestnut st, Phila
Wittstock, F & R, Berlin, S. 59, Germany
Young & Sons, 43 N. 4th st, Philadelphia

Insulating Materials.
Standard Paint Co, 103 William st, New York

Iron Work (Ornamental).
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Belmont Iron Works, Philadelphia Pa
Brooks, T H, & Co, Cleveland, O
Rogers Iron Co, Springfield, O
Schrieber, L, & Sons Co, Cincinnati, O
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Walton Iron Co, Cincinnati, O

Iron Work (Structural).
(see Structural Steel and Iron Work.)

Jacks.
Duff Mfg Co, Allegheny, Pa
Norton, A O, 286 Congress st, Boston
Watson-Stillman Co, 210 E 43d st, N Y

Labor (Italian).
Italo American Trust Co, 725 Carpenter st, Phila
Julian Bros, 110 Mott st, New York

Laboratories (Chemical and Testing).
Booth, Garrett & Blair, Philadelphia, Pa
Hunt, R W, & Co, Rookery, Chicago
McKenna, Chas F, 221 Pearl st, New York
Pittsburg Testing Laboratory, Pittsburg, Pa
Riehle Bros. Test & Machine Co, Philadelphia, Pa

Lamps (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Lathing (Metallic).
Berger Mfg Co, Canton, O
General Fireproofing Co, Youngstown, O
(see also Fireproofing.)

Lead (Pig).
Millar, Chas & Son Co, Utica, N Y
Ogden, J Edward Co, 147 Cedar st, New York

Lead Furnaces.
McLean, John, 298 Monroe st, New York
Ogden, J Edward Co, 147 Cedar st, New York
Union Iron Works, Hoboken, N J

Light (Contractors').
Kitson Hydro-Carbon Htg & Lighting Co, Phila
Macleod & Co, Walter, Cincinnati Ohio
Wells Light Co, 44 Washington st, New York

Locomotive Tires.
Latrobe Steel Co, 1200 Girard bldg, Philadelphia, Pa

Locomotives.
American Locomotive Co, 25 Broad st, New York
Baldwin Locomotive Works, Philadelphia, Pa
Heisler, Charles L, Erie, Pa.
Porter, H K Co Pittsburg, Pa.

Locomotives (Contractors').
Avery, C F, 111 Liberty st, New York
Byers, John F, Machine Co, Ravenna, Ohio
Fitz-Hugh & Co, Chicago and New York
Porter, H K, Co, Pittsburg, Pa
Vulcan Iron Works, Wilkesbarre, Pa

Locomotives (Electric and Mining).
Baldwin Locomotive Works, Philadelphia, Pa
Brill, J G, Co, Philadelphia
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Koppel, Arthur, 66 Broad st, New York
Patton & Co, J. R., House bldg, Pittsburg, Pa
Porter, H K, Co, Pittsburg, Pa
Westinghouse Electric & Mfg Co, Pittsburg

Locomotive Headlights.
(see Headlights, Locomotives.)

Locomotives (Second hand).
(See Railway Equipment, Dealers.)

Lubricants.
Dixon, Jos, Crucible Co, Jersey City, N J

Lubricators.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Lumber (Creosoted).
American Creosote Works, Ltd, New Orleans, La
Atlantic Creo & Wood Pres Wks, 10 Bridge St, N Y
Carbolineum Wood Pres Co, 13 Park Row, N Y
International Creosoting & Con Co, Galveston, Tex
Norfolk Creosoting Co, Norfolk, Va
Wyckoff Pipe & Creosoting Co, Stamford, Conn
(see also Creosoting)

Lumber (Dock).
Vanderbilt & Hopkins, 126 Liberty st, New York

Machinery (Second hand).
Braden, Jas A, 514 Park Row bldg, New York
Briggs, Marvin, 12 Broadway, New York
Carlin Machy & Supply Co, 186 Lacock st, Allegheny
Carlin, W J, 34th st & A V R R, Pittsburg, Pa
Chicago House Wrecking Co, W. 35th & Iron sts, Chicago
Contractors' Supply Co, 1531 Monadnock blk Chicago
Contractors' Plant Depot, 27 William st, New York
Driscoll, J. T., McCormick bldg, Chicago
Efros Co, Chas, Bayonne, N J
Fitz-Hugh Co, Monadnock Block, Chicago
Grant & Harper Machy Co, Park Row bldg, New York
Low, Edgar S, Co, Empire bldg, Pittsburg
Saxton, J C, 18 Broadway, New York
Troy Public Works Co, 1 Mann bldg, Utica, N Y
Whitney, O R, 39 Cortlandt st, New York

Machine Tools.
Manning, Maxwell & Moore, 85 Liberty st, New York
Niles Tool Works Co, 136-138 Liberty st, New York

Mail Chutes.
Cutler Mfg Co, Rochester, N Y

Manholes and Covers.
(See Sewer and Street Castings; also Castings, Iron.)

Measure (Rotary).
Steckenreiter Mfg Co, 98 Lake st, Chicago, Ill

Measuring Tapes. (Steel).
Chicago Steel Tape Co, 508 Temple Court, Chicago
Johnston, Robt, Wilkesbarre, Pa
Keuffel & Esser, 127 Fulton st, New York
Lufkin Rule Co, Saginaw, Mich
Starrett, L S, Co, 96 Crescent st, Athol, Mass

Merchandise Checks.
Am. Ry Supply Co, 24 Park Place, New York

Mechanical Draft.
American Blower Co, Detroit
Buffalo Forge Co, Buffalo, N Y
Sturtevant, B F, Co, Boston, Mass
(see also Blowers.)

Metal Hose (See Hose, Metal).

Meters (Current).
Berger, C L, & Sons, 9 Province st, Boston, Mass

Meters (Electric).
General Electric Co, Schenectady, N Y
Westinghouse Electric & Mfg Co, Pittsburg

Meters (Gas).
Pittsburg Meter Co East Pittsburg Pa

Meters (Water).
Buffalo Meter Co, 383 Washington st, Buffalo
Builders Iron Foundry, Providence, R I
Cole, E S, 635 Park Row bldg, New York
Hersey Mfg Co, Boston, Mass
Neptune Meter Co, 253 Broadway, New York
Pittsburg Meter Co, East Pittsburg, Pa
Thomson Meter Co, 39 Washington st, Brooklyn, N Y
Union Water Meter Co, Worcester, Mass
Worthington, Henry R, Brooklyn, N Y

Mining Machinery.
Allis-Chalmers Co, Home Ins bldg, Chicago
American Diamond Rock Drill Co, 93 Liberty st N Y
Blanton, E A, Jr, The Bourse, Philadelphia
Bradley Pulverizer Co, 92 State st, Boston, Mass
Bucyrus Co, S, Milwaukee, Wis
Fairbanks, Morse & Co, Chicago
General Electric Co, Schenectady, N Y
Jeffrey Mfg Co, Columbus, O
Lidgerwood Mfg Co, 96 Liberty st, N Y
Marion Steam Shovel Co, Marion, Ohio
Rand Drill Co, 128 Broadway, N Y
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Vulcan Iron Works, Wilkesbarre, Pa

Mortar Mixers.
Drake, C T, 300 W Jackson Boulevard, Chicago

Motors (Electric). (see Dynamos.)

Non-Conducting Covering.
U S Mineral Wool Co, 143 Liberty st, New York

Nut Locks.
National Elastic Nut Co, Milwaukee, Wis

Oil Burners.
Hammel, C A, 120 Fifth st, Los Angeles, Cal

Oil Cups.
Crane Co, Chicago, Ill
Lunkenheimer Co, Cincinnati, Ohio

Oil Mill Machinery.
Stilwell-Bierce & Smith-Valle Co, Dayton, Ohio

Oilless Bearings.
No Am Metaline Co, 6 West av, Long Island City, N Y

Ore Handling Machinery.
(see Coal and Ore Handling Machinery.)

Packing.
Detroit Leather Specialty Co, 900 Michigan av, Detro
Robertson, Jas L, & Sons, 192 Fulton st, New York

Painting Machines (Pneumatic).
Hook, F E, Hudson, Mich
Macleod & Co, Walter, Cincinnati, O

Paint Pigment.
Internat'l Acheson Graphite Co, Niagara Falls N Y

Paints.
Carbolineum Wood Pres Co, 13 Park Row, N Y
Chilton Paint Co, 69 Cortlandt st, N Y
Detroit Graphite Mfg Co, Detroit, Mich
Dixon, Jos, Crucible Co, Jersey City, N Y
Goheen Mfg Co, Canton, Ohio
Heath & Milligan Mfg Co, Chicago
Hook, F E, Hudson, Mich
National Paint Works, Williamsport, Pa
Rinald Bros, 1142 N Hancock st, Philadelphia
Sicilian Asphalt Paving Co, Times bldg, New York
Standard Paint Co, 103 William st, New York
Toch Bros, New York
Ziibel Damp-Resisting Paint Co, 230 Front st, N Y

Paint (Cold Water).
Bird & Co, J A & W, 10 Well st, Boston

Patent Attorneys.
Hill, Thos A, 261 Broadway, New York
Straley, Hasbrouck & Schloeder, 257 Broadway, N Y

Pattern Letters.
Butler, A G, 284 Pearl st, New York

Paving (Bituminous-Macadam).
Warren Bros Co, 93 Federal st, Boston

Paving Blocks (Stone).
Leopold, J. & Co, 18 Broadway, New York
(See also Stone.)

Paving Brick (see Brick).

Perforated Metals.
Harrington & King Perforating Co, Chicago, Ill

Pile Driving Machinery.
American Hoist & Derrick Co, St. Paul, Minn
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee Wis
Contractors' Plant Mfg Co, Buffalo, N Y
Lidgerwood Mfg Co, 96 Liberty st, N Y
Mundy, J S, Newark, N J
Toledo Foundry & Machine Co, Toledo, Ohio
Vulcan Iron Works, Chicago, Ill

Pile Hammers.
Vulcan Iron Works, Chicago, Ill

Piling.
American Creosote Works, Ltd, New Orleans, La
Atlantic Creosot. & Wood Pres. Co, 10 Bridge st, N Y
Eppinger & Russell Co, 66 Broad st, New York
Meredith J P, Memphis, Tenn
New Orleans Wood Preserving Works, New Orleans
Norfolk Creosoting Co, Norfolk, Va
Southern Creosoting Co, Slidell, La
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Pipe (Cast Iron).
Builders Iron Foundry, Providence, R I
Byers, John F, Machine Co, Ravenna, Ohio
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Dimmick Pipe Co, Birmingham, Ala
Dimmick, J K, & Co, 1049-51 Drexel bldg, Phila
Donaldson Iron Co, Emaus, Pa
Drummond, M J, & Co, 192 Broadway, New York
Fox, John, & Co, 253 Broadway, New York
Massillon Iron & Steel Co, The Rookery, Chicago
Millar, Chas, & Son Co, Utica, N Y
Reading Foundry Co, Ltd, Reading, Pa
Snow, T W, 230 Dearborn st, Chicago, Ill
U S Cast Iron Pipe & Fdry Co, 217 La Salle st, Chicago
Warren Foundry & Machine Co, 160 Broadway, N Y
Wood, R D, & Co, Philadelphia, Pa

Pipe (Culvert). See Pipe, Vitrified Clay.

Pipe (Lead).
Millar, Chas, & Son Co, Utica, N Y

Pipe (Riveted Steel).
Carroll-Porter Boiler & Tank Co, Pittsburg, Pa
Columbiana Boiler Co, Columbiana, Ohio
Gillespie, T A, Co, Pittsburg, Pa
Keeler, E, Co, Williamsport, Pa
McNeil, Jas, & Bro, 29th & Railroad sts, Pittsburg Pa
Means & Fulton Iron Works, Birmingham, Ala
Pelton Water Wheel Co, 134 Main st, San Francisco
Scaife, Wm B, & Sons Co, Pittsburg, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Warren City Tank & Boiler Works, Warren, O
Welgele Riveted Steel Pipe Works, Denver, Colo

Pipe (Spiral Riveted).
Abendroth & Root Mfg Co, Newburgh, N Y
Am Spiral Pipe Works, 64-66 Wabash ave, Chicago

Pipe (Vitrified Clay).
American Sewer Pipe Co, Pittsburg, Pa
Blackmer & Post Pipe Co, St Louis, Mo
Dickey, W S, Clay Mfg Co, Kansas City, Mo
Evens & Howard Fire Brick Co, St Louis, Mo
Illinois Mfg Co, Macomb, Ill
Jackson, John H, Albany, N Y
Millar, Chas, & Son Co, Utica, N Y
Monmouth Mining & Mfg Co, Monmouth, Ill
New York Pottery Co, 12th ave & 36th st, N Y
Robinson Bros & Co, Akron, O
Standard Sewer Pipe Co, Rochester, N Y

Pipe (Wooden).
American District Steam Co, Lockport, N Y
Excelsior Wooden Stave Pipe Co, San Francisco
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Pipe (Wrought Iron).
Crane Co, Chicago, Ill
Fox, John & Co, 253 Broadway, New York
National Tube Co, Pittsburg
Pittsburg Pipe & Iron Co, Allegheny, Pa
California Redwood Pipe Co, Los Angeles

ADVERTISERS' CLASSIFIED DIRECTORY

Pipe Casing.
U S Mineral Wool Co, 143 Liberty st, New York

Pipe Cutting and Threading Machines.
Saunder's, D, Sons, Yonkers, N Y

Pipe Fittings and Flanges.
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
Latrobe Steel Co, Girard bldg, Philadelphia
National Tube Co, Pittsburg
Thompson, J, & Co, Van Horn & Sophia sts, Phila P
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Joint (High Pressure).
Tight Joint Co, 306-310 East 47th st, New York
Walworth Mfg Co, Boston

Pipe Jointers.
Watkins, Thos, Johnstown, Pa

Pipe Laying (Submarine).
Falcon, Jos G, 1110 Ayers Court, Evanston, Ill
Holmes, A L, Grand Rapids, Mich

Pipe Line Supplies.
Ogden, J Edward Co, 147 Cedar st, New York

Pipe Tapping Machines (See Tapping Machines)

Plaster.
Rock Plaster Co, 11 Broadway, N Y

Plows (see Scrapers and Plows).

Plumbers' Supplies.
Campbell, J G, Brass Works, Cascade st, Erie, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Miliar, Chas, & Son, Inc, Utica, N Y

Pneumatic Tools.
Chicago Pneumatic Tool Co, Fisher bldg, Chicago
Columbus Pneumatic Tool Co, Columbus, Ohio
General Pneumatic Tool Co., Moutour Falls, N Y
Heinig Mfg Co, St Paul, Minn
Philadelphia Pneumatic Tool Co, Philadelphia
Slocomb, F F, & Co, Wilmington, Del
(see also Riveting Machines)

Poles (Wooden)
(see Piling.)

Portable Light (see Light, Contractors').

Portable Tracks.
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Koppel, Arthur, 68 Broad st, New York
Wonham Magor Eng. Wks, 29 Broadway, New York

Power Hammers.
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Power Transmission (Electric).
General Electric Co, Schenectady, N Y
Leffel, Jas, & Co, Springfield, O
Pelton Water Wheel Co, 134 Main st, San Francisco
Westinghouse Electric & Mfg Co, Pittsburg

Power Transmission (Rope).
Caldwell, H W, & Son Co, 17th st & Western ave, Chic
Case Mfg Co, Columbus, O
Cresson, Geo V, Co, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Jeffrey Mfg Co, Columbus, O
Link Belt Engineering Co, Nicetown, Phila

Press (Artificial Stone).
Palmer, Noyes F, 130 Snediker ave Brooklyn, N Y

Pressure Gages (Recording)
Bristol Co, Waterbury, Conn

Pressure Regulators
d'Estè, Julian, Co, 15 Canal st, Boston
Foster Engineering Co, Newark, N J
Union Water Meter Co, Worcester, Mass

Pulleys.
Case Mfg Co, Columbus, O
Dodge Mfg Co, Mishawaka, Indiana

Pulverizers (Ore and Cement).
Allis-Chalmers Co, Home Ins bldg, Chicago
Bradley Pulverizer Co, 92 State st, Boston, Mass
Clark J C, Box 525, Atlanta, Ga
Cresson, Geo V, Co, Philadelphia
Kent Mill Co, 170 Broadway, New York
Newell Mfg Co, 149 Broadway, New York
Smidth, F L, & Co, 66 Maiden lane, New York
West Pulverizing Machine Co, Jersey City, N J

Pumps and Pumping Machinery.
Allis-Chalmer Co, Home Ins bldg, Chicago
American Well Works, Aurora, Ill
Barr Pumping Engine Co, Philadelphia
Blake, Geo F, Mfg Co, 91 Liberty st, New York
Bonnot Co, Canton, Ohio
Cameron, A S, Steam Pump Works, New York
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Cook Well Co, St Louis
d'Auria Pumping Engine Co, 941 Drexel bldg, Phila
Davidson, M T, 141 Kent ave, Brooklyn, N Y
Dean Bros' Steam Pump Works, Indianapolis, Ind
Deane Steam Pump Co, Holyoke, Mass
Deming Co, Salem, Ohio
Downie Pump Co, Downieville, Pa
Edwards, Jos, & Co, 414 Water st, New York
Epping Carpenter Co, Pittsburg
Fairbanks, Morse & Co, Chicago
Flint & Walling Mfg Co, Kendallville, Ind
Goulds Mfg Co, Seneca Falls, N Y
Guild & Garrison, Sta B, Brooklyn, N Y
Hill Machine Co, Anderson, Ind
Heister Pumping Engine Co, Erie, Pa
Knowles Steam Pump Works, 81 Liberty st, N Y
Laidlaw-Dunn-Gordon Co, Cincinnati, O
Lawrence Machine Co, Lawrence, Mass
McGowan, John H, Co, Cincinnati, Ohio
Norwalk Iron Works Co, South Norwalk, Conn
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Quimby, Wm E, 141 Broadway, N Y
Roots, P H & F M, Co, Connersville, Ind
Scranton Steam Pump Co, 151 Franklin ave, Scranton
Snow Steam Pump Works, 120 Liberty st, New York
Southwark Foundry & Machine Works, Philadelphia
Stilwell-Bierce & Smith-Vaile Co, Dayton, Ohio
U S Wind Engine & Pump Co, Batavia, Ill
Wood, P K, 309 No Main st, Los Angeles, Cal
Wood, R D, & Co, Philadelphia
Worthington, Henry R, Brooklyn, N Y

Pumps (Air Lift).
Bacon Air Lift Co, 100 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Union Steam Pump Co, Battle Creek, Mich

Pumps (Artesian Well).
Davidson, M T, 141 Broadway, New York
Downie Pump Co, Downieville, Pa
Wood, P K, 309 No Main st, Los Angeles, Cal

Pumps (Centrifugal).
Baldwinsville (N Y) Centrifugal Pump Works
Bucyrus Co, South Milwaukee, Wis
Edwards, Jos, & Co, 414 Water st, New York
Erie Pump & Engine Co, Erie, Pa
Kingsford Foundry & Machine Works, Oswego, N Y
Lawrence Machine Co, Lawrence, Mass
Maxfield, H E, & Co, 136 Liberty st, New York
Morris Machine Works, Baldwinsville, N Y
Temple Pump Co, 1543 Place, Chicago
Wood, R D, & Co, Philadelphia

Pumps (Diaphragm).
Boston & Lockport Block Co, 180 Commercial st, Boston
Edson Mfg Co, 255 Atlantic ave, Boston

Pumps (Electric).
Davidson, M T, 141 Broadway, New York
Deming Co, Salem, Ohio
Goulds Mfg Co, Seneca Falls, N Y
Quimby, Wm E, 141 Broadway, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Worthington, Henry R, Brooklyn, N Y

Pumps (House Service).
Quimby, Wm E, 141 Broadway, New York

Pumps (Mining)
Davidson, M T, 141 Broadway, New York
Goulds Mfg Co, Seneca Falls, N Y
Pneumatic Engineering Co, 128 Broadway, N Y
Pulsometer Steam Pump Co, 135 Greenwich st, N Y
Scranton Steam Pump Co, Scranton, Pa
Snow Steam Pump Works, 120 Liberty st, New York
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, P K, 309 No Main st, Los Angeles, Cal

Punching Tools.
Pels & Co, Henry, 66-68 Broad st, New York

Pumps (Rotary).
Connersville Blower Co, Connersville, Ind

Pyrometers.
Bristol Co, Waterbury, Conn

Quarrying Machinery.
Flory, S, Mfg Co, Bangor, Pa
Ingersoll-Sergeant Drill Co, 26 Cortlandt st, New York
Rand Drill Co, 128 Broadway, New York
Sullivan Machinery Co, 135 Adams st, Chicago
Tyrone Foundry & Machine Co, Tyrone, Pa

Rack Railways.
Hildenbrand, Wm, 1 Broadway, New York

Rail Fastenings.
Continuous Rail Joint Co of America, Newark, N J
National Elastic Nut Co, Milwaukee
N Y Rail Insulation & Equip Co, 200 Market st, Newark
Weber Ry Joint Mfg Co, Cotton Exch bldg, N Y

Rail Joints.
Bonzano Rail Joint Co, 22 South 15th st, Philadelphia
Continuous Rail Joint Co of America, Newark, N J
McConway & Torley Co, Pittsburg, Pa
Weber Ry Joint Mfg Co Cotton Exch bldg, N Y

Rails (Relaying).
Continental Equipment Co, 5-17 Battery Place, N Y
Donaldson & Newton, 421 Chestnut st, Philadelphia
Grant & Harper Machy Co, Park Row bldg, New York
Hyde Bros, 402 Lewis bldg, Pittsburg
Johnson, Chas F, 909 Ellicott square, Buffalo
Robinson & Orr, 419 Wood st, Pittsburg
Tallon, C J, 306 Market st, San Francisco

Rails (Steel).
Baumgarten & Bro, A F, Pittsburg, Pa
Buffalo Steel Co, Tonawanda, N Y
General Supply & Const'n Co, 8-10 Bridge st, N Y
Koppel, Arthur, 68 Broad st, New York
Pennsylvania Steel Co, Steelton, Pa

Railway Equipment (Dealers).
Apex Equipment Co, 11 Broadway, New York
Fitz-Hugh & Co, Monadnock bldg, Chicago
Low, Edgar S, Co, Empire bldg, Pittsburg
Wales Co, Ætna bldg, Cincinnati
Shannon, J Jacob, & Co, 1714 Market st, Philadelphia
Watson, Benjamin, 66 Beaver st, New York

Railway Signals (Pneumatic)
Pneumatic Signal Co, Broad-Exchange bldg, N Y

Railway Ties.
American Creosote Works, Ltd, New Orleans La
New Orleans Wood Preserving Works, New Orleans
Vanderbilt & Hopkins, 136 Liberty st, New York
Wyckoff Pipe & Creosoting Co, Portsmouth, Va

Railway Track Specialties.
Diamond State Steel Co, Wilmington, De
N Y Switch & Crossing Co, Hoboken, N J
Railroad Supply Co, Bedford bldg, Chicago
Ramapo Iron Works, Hillburn, N Y
Weir Frog Co, Cincinnati, Ohio

Railways (Industrial).
Koppel, Arthur, 68 Broad st, New York
Wonham-Magor Eng. Wks, 29 Broadway, New York

Riveting Machines.
Albree, Chester B, 14-30 Market st, Allegheny, Pa
Allen, John F, 370 Gerard ave, New York
General Pneumatic Tool Co, Montour Falls, N Y
Manning, Maxwell & Moore, 85 Liberty st, New York
Rand Drill Co, 128 Broadway, New York
Wood, R D, & Co, 400 Chestnut st, Philadelphia Pa
(see also Pneumatic Tools.)

Road Rollers and Machinery.
Acme Road Machinery Co, Frankfort, N Y
Austin Mfg Co, F C, Harvey, Ill
Buffalo Pitts Steam Roller Works, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Erie Machine Shops, Erie, Pa
Goods Roads Machinery Co, Kennett Square, Pa
Harrisburg Foundry & Mach Co, Harrisburg, Pa
Heisler, Chas L, Erie, Pa
Huber Mfg Co, Marion, Ohio
Iroquois Iron Works, 178 Walden ave, Buffalo, N Y
Kelly-Springfield Road Roller Co, Springfield, O
Oastler, W C, 156 Fifth ave, New York
Port Huron Engine Co, Port Huron, Mich
Scholl, Julian, & Co, 126 Liberty st, New York
Stuart Grader Co, Oberlin, O
Western Wheeled Scraper Co, Aurora, Ill

Rock and Ore Crushers.
Acme Road Machinery Co, Frankfort, N Y
Allis-Chalmers Co Home Ins bldg, Chicago
Austin Mfg Co, F C, Harvey, Ill
Aultman Co, Canton, Ohio
Bradley Pulverizer Co, 92 State st, Boston, Mass
Climax Road Machine Co, Marathon, N Y
Cresson Co, Geo V, Philadelphia
Farrel Foundry & Machine Co, 26 Cortlandt st, N Y
Good Roads Machinery Co, Kennett Square, Pa
Scholl, Julian, & Co, 126 Liberty st, New York
Smidth, F L, & Co, 66 Maiden lane, New York
Sturtevant Mill Co, 108 Clayton st, Boston
Tyrone Foundry & Machine Co, Tyrone, Pa
Western Wheeled Scraper Co, Aurora, Ill

Rock Drills.
American Diamond Rock Drill Co, 95 Liberty st, N Y
Davis Calyx Drill Co, 128 Broadway, New York
Ingersoll-Sergeant Drill Co, Havemeyer bldg, N Y
McKiernan Drill Co, 170 Broadway, New York
Rand Drill Co, 128 Broadway, New York
Rogers, John M, Gloucester City, N J
Sullivan Machinery Co, 135 Adams st, Chicago, Ill
Wood Drill Works, 30 Dale ave, Paterson, N J

Rolling Doors, Partitions, etc. (Steel).
Kinnear Mfg Co, Columbus, Ohio
Wilson, J G, 3 W 29th St, New York

Roofing.
Standard Paint Co, 103 William st, New York

Roofing (Corrugated).
Garry Iron & Steel Co, Coe and Lake sts, Cleveland
Scaife, W B, & Sons Co, Pittsburg

Rope (Manila).
Dodge Mfg Co, Mishawaka, Indiana
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Smith, S Morgan, Co, York, Pa

Scales (Weighing).
Fairbanks, Morse & Co, Chicago
Richardson Scale Co, 13 Park Row, New York

Schools (Correspondence).
Am. School of Armour Inst. of Tech. Chicago
(For Directory of Engineering Schools see p. 4.)

Scrapers and Plows.
Austin Mfg Co, Manhattan bldg, Chicago
Contractors' Plant Mfg Co, Buffalo, N Y
Climax Road Machine Co, Marathon, N Y
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Shuart Scraper Co, Oberlin, O
Smith & Sons Mfg Co, Kansas City, Mo
Syracuse Chilled Plow Co, Syracuse, N Y
Western Wheeled Scraper Co, Aurora, Ill

Screens (Stone and Sand).
Allis-Chalmers Co, Home Ins bldg, Chicago
Aultman Co, Canton, O
Climax Road Machine Co, Marathon, N Y
Harrington & King Perforating Co, Chicago, Ill
Taylor Iron & Steel Co, High Bridge, N J

Screens (Water-Works).
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Seamless Drawn Tanks and Tubes.
National Tube Co, Pittsburg

Separators (Oil and Steam).
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Robertson, Jas L, & Sons, 192 Fulton st, New York

Sewage Disposal.
Cameron Septic Tank Co Monadnock block, Chicago
Hygienic Suburban Sewage Co, 1733 B'way, N Y

Sewer Braces.
Dunn Mfg Co, Pittsburg, Pa
Potter Mfg Co, 2010 N W ave, Indianapolis, Ind

Sewer and Street Castings.
Sessions Foundry Co, Bristol, Conn
(see also Castings, Iron.)

Sewer Pipe (see Pipe, Vitrified)

Shafting.
Case Mfg Co, Columbus, O
Cresson, Geo V, Philadelphia
Dodge Mfg Co, Mishawaka, Indiana
Poole, Robt, & Son Co, Baltimore, Md

Sheet Iron Work.
Am Sheet Steel Co, Battery Park bldg, New York
Petroleum Iron Works Co, Washington, Pa
Scaife, Wm B, & Sons Co, Pittsburg

Sheet Steel.
Am Sheet Steel Co, Battery Park bldg, New York
American Steel & Wire Co, New York & Chicago

Shutters (Fire Proof).
Kinnear Mfg Co, Columbus, Ohio

Skylights.
Plenty, Josephus, Jersey City, N J
Valle & Young, Baltimore, Md

Sluice Gates.
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y

Smoke Stacks (see Stand-Pipes and Tanks).

Speed Governers.
Foster Engineering Co, Newark, N J

Stamp Mills.
Allis-Chalmers Co, Home Ins bldg, Chicago

Stand-Pipes and Tanks.
Caldwell, W E, Co, 200 East Main st, Louisville, Ky
Chicago Bridge & Iron Co, Chicago
Columbiana Boiler Co, Columbiana, O
Enterprise Boiler Co, Youngstown, O
Gem City Boiler Co, Dayton, O
Girard Boiler & Mfg Co, Girard, O
Hodge Boiler Co, East Boston, Mass
Keeler, E, Co, Williamsport, Pa
King Bridge Co, Cleveland, O
Means & Fulton Iron Works, Birmingham, Ala
North Penn Iron Co, 3d and Sedgley ave, Phila
Petroleum Iron Works Co, Washington, Pa
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, Wm B, & Sons Co, Pittsburg
Sharon Boiler Works, Sharon, Pa
Smith, Theo, & Sons Co, Jersey City, N J
Snow, T W, 360 Dearborn st, Chicago
Strutners-Wells Co, Warren, Pa
Tallerday Steel Pipe & Tank Co, Waterloo, Ia
Tippett & Wood, Phillipsburg, N J
U S Wind Engine & Pump Co, Batavia, Ill
Warren City Tank & Boiler Works, Warren, O
Wood, R D & Co, Philadelphia, Pa

Steam Shovels.
Austin, Mfg Co, Manhattan bldg, Chicago
Beatty, M, & Sons, Welland, Ont
Bucyrus Co, South Milwaukee, Wis
Hunt, C W, Co, Richmond Terrace, W N Brighton, NY
Marion Steam Shovel Co, Marion, O
Mead, John A, & Co, 7 Broadway, New York
Osgood Dredge Co, Albany, N Y
Souther, John, & Co, Boston, Mass
Thew Automatic Shovel Co, Lorain, O
Toledo Foundry & Machine Co, Toledo, O
Vulcan Iron Works Co, Toledo

Steam Specialties.
American District Steam Co, Lockport, N Y
Crane Co, Chicago, Ill
Darling Pump & Mfg Co, Box E, Williamsport, Pa
d'Estè, Julian, Co, 15 Canal st, Boston
Harrison Safety Boiler Wks, 3166 N 17th st, Phila
Lunkenheimer Co, Cincinnati, O
Manning, Maxwell & Moore, 85 Liberty st, New York
Maxfield, H E, & Co, 136 Liberty st, New York
Robertson, Jas L, & Sons, 192 Fulton st, New York
Union Steam Spec. Co, 151 Franklin ave, Scranton, Pa
(see also Separators, Oil and Steam.)

Steam Traps.
American Blower Co, Detroit, Mich
Buffalo Forge Co, Buffalo, N Y
Crane Co, Chicago, Ill
d'Estè, Julian, Co, 15 Canal st, Boston
Sturtevant, B F, Co, Boston, Mass

Steel Clips.
Streeter, H A 35 Indiana st, Chicago

Steel Flanges (Weldless).
Latrobe Steel Co, Girard bldg, Philadelphia

Steel Ties.
Koppel, Arthur, 68 Broad st, New York

Stone.
Bound Brook (N J) Crushed Stone Co
Leopold, J, & Co, 18 Broadway, New York
Thiel, August, Guttenberg, N J
Tomkins, Calvin, 120 Liberty st, New York

Street Railway Supplies.
Brill, J G, Co, Philadelphia, Pa

Street Sprinklers and Sweepers
Austin, F C, Mfg Co, Harvey, Ill
Brill, J G, Co, Philadelphia, Pa
Edson Mfg Co, 255 Atlantic ave, Boston
Good Roads Machinery Co Kennett Square, Pa
Oastler Steam Road Roller, 156 Fifth ave New York

Structural Steel and Iron Work.
Berlin Construction Co, Berlin, Conn
Brooks, T H, & Co, Cleveland, O
Eichleay, John, & Co, Pittsburg
General Supply & Const'n Co, 8-10 Bridge st, N Y
Kratzer, W N, & Co, 3218 Smallman st, Pittsburg
Link Belt Engineering Co, Nicetown, Phila
Means & Fulton Iron Works, Birmingham, Ala
Minneapolis Steel Mach'y Co, Minneapolis, Minn
National Skylight & Const'n Co, 120 Liberty st, N Y
N J Foundry & Machine Co, 9 Murray st, N Y
North Penn Iron Co, 3d and Sedgley ave, Phila
Pedrick, R K, Co, 120 Liberty st, New York
Schreiber, L, & Sons Co, Cincinnati, O
Sharon Boiler Works, Sharon, Pa
Snare & Triest, 39 Cortlandt st, New York
Snead & Co Iron Works, ft of Pine st, Jersey City, N J
Streeter, H A, 35 Indiana st, Chicago
Tippett & Wood, Phillipsburg, N J
Walton Iron Co, Cincinnati
(see also Bridges and Buildings.)

Stump Pulling Machine.
Milne Mfg Co, 394 Eighth st, Monmouth, Ill

Submarine Armor (see Diving Apparatus).

Superheaters (Steam).
Power Specialty Co, 126 Liberty st, New York

Tacks, Thumb
Albrecht, C R, 62 Fulton st, New York

Tanks.
Berquist, A S, 515 Bedford ave, Brooklyn, N Y
Hodge Boiler Works, East Boston, Mass
Pacific Tank Co, Los Angeles, Cal.
Riter-Conley Mfg Co, Pittsburg, Pa
Scaife, W B, & Sons, Pittsburg
Steel Storage Elevator & Const'n Co, Buffalo, N Y
Warren City Tank & Boiler Works, Warren, O
(see also Stand Pipes and Tanks.)

Tapes (Steel). See Measuring Tapes.

Tapping Machines (Pipe).
Smith, Anthony P, Mfg Co, Newark, N J

Tents.
Murray & Co, 329 S Canal st, Chicago

Test Borings (see Artesian Wells).

Testing Laboratories (see Laboratories).

Testing Machines.
Falkenau-Sinclair Machine Co, 109 N 22 st, Phila
Riehle Bros Test & Mach Co, 1424 N 9th st, Phila

Thermometers (Recording).
Bristol Co Waterbury, Conn

Tie Plates.
Diamond State Steel Co, Wilmington, Del
Railroad Supply Co, Bedford bldg, Chicago

Ties
Koppel, Arthur, 68 Broad st, New York
Wyckoff Pipe & Creosoting Co, Stamford, Conn

Time and Cost Keeping.
Industrial Time & Cost Keep. System, Bantam, Conn

Time Detectors.
Am Watchmen's Time Detector Co, 234 B'way, N Y
Imbauser, E, & Co, 206 Broadway, New York

Tracing Cloth.
Aloe, A S, Co, 414 North Broadway, St Louis
Favor, Ruhl & Co, 54 Park Place, N Y
Hardtmuth, L & C, 49 Barclay st, New York
(see also Instruments, Engineering, etc.)

Transformers.
General Electric Co, Schenectady, N Y

Traps (Sewer).
Sewer Trap Mfg Co, 61 Beekman st, New York

Trench Machines.
Carson Trench Machine Co, Boston, Mass
Potter Mfg Co, 2010 N W ave Indianapolis, Ind

Tubing (Flexible Metallic).
Moore, Chas C, & Co, 32 First st, San Francisco

Turbines.
Camden Water-Wheel Wks, Camden, New York
Dayton Globe Iron Works Co, 7 Ludlow st, Dayton, O
Leffel, Jas, & Co, Springfield, O
Poole, Robert, & Son Co, Baltimore, Md
Risdon-Alcott Turbine Co, Mt Holly, N J
Smith, S Morgan, Co, York, Pa
Stilwell-Bierce & Smith-Vaile Co, Dayton, O
Wood, R D, & Co, Philadelphia, Pa

Turnbuckles.
Cleveland City Forge & Iron Co, Cleveland
Merrill Bros, 467 Kent ave, Brooklyn, N Y

Turntables.
American Bridge Co, New York
Boston Bridge Works, 43 Winter st, Boston, Mass
Chicago Bridge & Iron Co, Chicago
Columbia Bridge Co, Pittsburg
Fort Pitt Bridge Works, Pittsburg, Pa
Hunt, C W, Co, Richm'd Terrace, W N Brighton, N Y
King Bridge Co, Cleveland, O
Koppel, Arthur, 68 Broad st, New York
McClintic-Marshall Construction Co, Pottstown, Pa
Mo Valley Bridge & Iron Wks, Leavenworth, Kan
Mount Vernon Bridge Works, Mount Vernon, O
Passaic Steel Co, Paterson, N J
Philadelphia Bridge Works, Pottstown, Pa
Phoenix Bridge Co, 1321 Arch st, Philadelphia
Virginia Bridge & Iron Co, Roanoke, Va
Wonham-Magor Eng. Wks, 29 Broadway, New York

Valve Boxes.
Cayuta Wheel & Foundry Co, Sayre, Pa
Clow, J B, & Sons, Lake and Franklin sts, Chicago
Drummond, M J, & Co, 192 Broadway, N Y

Valves.
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Darling Pump & Mfg Co, Box E, Williamsport, Pa
(see also Hydrants and Valves.)

Valves (Gas).
Campbell, J B, Brass Works, Cascade st, Erie, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Ludlow Valve Mfg Co, Troy, N Y
Roots, P H & F M, Co, Cornersville, Ind

Valves (Gate).
Cayuta Wheel & Foundry Co, Sayre, Pa
Coffin Valve Co, Boston, Mass
Coldwell-Wilcox Co, Newburg, N Y
Crane Co, Chicago, Ill
Miliar, Chas, & Son Co, Utica, N Y
Walworth Mfg Co, Boston, Mass
Wood, R D, & Co, Philadelphia, Pa

Valves (Pressure Regulating).
Ross Valve Co, Troy, N Y
(see also Pressure Regulators.)

Valves (Steam).
Cayuta Wheel & Foundry Co, Sayre, Pa
Chapman Valve Mfg Co, Indian Orchard, Mass
Crane Co, Chicago, Ill
Crosby Steam Gage & Valve Co, Boston
Ludlow Valve Mfg Co, Troy, N Y
Lukenheimer Co, Cincinnati, O

Valves (Stop).
Foster Engineering Co, Newark, N J
Reading Foundry Co, Ltd, Reading, Pa
Sweet & Doyle, Cohoes, N Y
Thompson, J, & Co, Philadelphia

Varnish and Colors.
(see Paints.)

Vault Lights.
Brooks, T H, Cleveland, Ohio
Tucker & Vinton, 156 Fifth ave, New York

Ventilators.
Buffalo Forge Co, Buffalo, N Y
Merchant & Co, Inc, Philadelphia, Pa

Vises (Parallel).
Merrill Bros, 467 Kent ave, Brooklyn

Wagons and Carts.
Austin, F C, Mfg Co, Harvey, Ill
Climax Road Machine Co, Marathon, N Y
Columbia Wagon Co., Columbia, Pa
Good Roads Machinery Co, Kennett Square, Pa
National Drill & Mfg Co, 159 La Salle st, Chicago
Port Huron Engine Co, Port Huron, Mich
U S Sanitary Co, Washington, D C
Watson Wagon Co, Canastota, N Y
Western Wheeled Scraper Co, Aurora, Ill

Water Motors.
Backus Water Motor Co, Newark, N J

Water Softening Plants.
Industrial Water Co, 126 Liberty st, New York
Kennicott Water Soft Co, 406 Great North. bldg, Chic
N Y Continental Jewell Filtration Co, 15 Broad st, NY
Patterson, D W, Harrison bldg, Philadelphia, Pa
Pittsburg Filter Mfg Co, Pittsburg

Water Storage Systems.
Acme Water Stor & Const'n Co, Park Row bldg, N Y

Water Wheel Governers.
(see Governors, Water-Wheel.)

Water Wheels.
Cassel Auto Water Motor Co, Seattle, Wash
Doble, Abner, Co, Fremont & Howard, San Francisco
Pelton Water Wheel Co, 134 Main st, San Francisco
(see also Turbines.)

Water-Works Tools and Supplies.
Flint & Walling Mfg Co, Kendallville, Ind
Smith, A P, Mfg Co, Newark, N J

Well Drilling Machinery.
American Well Works, Aurora, Ill
Cook Well Co, St Louis, Mo
Star Drilling Machine Co, 104 Fulton st, New York
Williams Bros, Ithaca, N Y

Wharf and Pier Builders.
Atlantic, Gulf & Pacific Co, 13-21 Park Row, N Y
McMullen, Arthur, & Co, 13-21 Park Row, New York
O'Rourke, John F, Park Row bldg, N Y
Phoenix Bridge Co, Phoenixville, Pa
San Francisco Bridge Co, 220 Market st, San Francisco

Wheelbarrows.
Cockburn Barrow & Machine Co, Jersey City, N J
Syracuse Chilled Plow Co, Syracuse, N Y
Steubner, G L, Long Island City, N Y
Western Wheeled Scraper Co, Aurora, Ill

Whistles.
Crosby Steam Gage & Valve Co, Boston
Lunkenheimer Co, Cincinnati, O

Windmills.
Flint & Walling Mfg Co, Kendallville, Ind
Temple Pump Co, 15th Place, Chicago
U S Wind Engine & Pump Co, Batavia, Ill

Wire, Wire Rope and Cables.
American Steel & Wire Co, New York & Chicago
Broderick & Bascom Rope Co, St Louis
Leschen, A, & Sons Rope Co, St Louis
Macomber & Whyte Rope Co, 21 S Canal st, Chicago
Roebling's, John A, Sons Co, Trenton, N J
Trenton Iron Co, Trenton, N J
Williamsport Wire Rope Co, Williamsport, Pa

Worm Gearing.
Morse, Williams & Co, Philadelphia, Pa

Wire Fence (see Fencing).

Wood Preserving (see Creosoting).

Wrenches.
Keystone Drop Forge Wks, 30th & Clearfield sts, Phila

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